

**Utilising Cross-Functional Teams to achieve  
Marketing / Operations Integration for Delivery  
Priority**

**An Empirical Investigation in the Iraqi Public Textile  
Industry Sector**

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**List of symbols denoting research subjects (factories and respondents)**

<b>Symbol</b>	<b>Statement</b>
F1	First factory of case study organisation A
F2	Second factory of case study organisation A
F3	Third factory of case study organisation A
F4	Fourth factory of case study organisation A
F5	First factory of case study organisation B
F6	Second factory of case study organisation B
F7	Third factory of case study organisation B
R1	Operations manager of F1
R2	Marketing manager of F1
R3	R&D manager of F1
R4	Operations manager of F2
R5	Marketing manager of F2
R6	R&D manager of F2
R7	Operations manager of F3
R8	Marketing manager of F3
R9	R&D manager of F3
R10	Operations manager of F4
R11	Marketing manager of F4
R12	R&D manager of F4
R13	Operations manager of F5
R14	Marketing manager of F5
R15	R&D manager of F5
R16	Operations manager of F6
R17	Marketing manager of F6
R18	R&D manager of F6
R19	Operations manager of F7
R20	Marketing manager of F7
R21	R&D manager of F7



## **Abbreviations**

- M/Ops: Marketing and Operations
- CFTs: Cross-Functional Teams
- CFI: Cross-Functional Integration
- CFC: Cross-Functional Coordination
- NPD: New Product Development
- ERP: Enterprise Resource Planning
- RBV: Resource Based View
- CE: Concurrent Engineering
- CAD: Computer- Aided Design
- CAE: Computer- Aided Engineering
- CAM: Computer-Aided Manufacturing
- MTS: Make to Stock
- MTO: Make to Order

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## **Abstract**

In today's manufacturing environment, due to the complexity of products, and the progress of technology, organisations are forced to be more responsive to the pressure of the dynamic market by developing, producing and delivering products quickly and before competitors (Bendoly et al., 2012; Gattiker, 2007). As a result, the integration between marketing and operations as core functions of a manufacturing organisation (Slack et al., 2013) has increasingly received attention from many academics and practitioners (e.g., Hausman et al., 2002; O'Leary-Kelly & Flores, 2002; Prabhaker, 2001; Swink & Song, 2007; Tang, 2010). This is because of the importance of the marketing and operations interface to achieve more rapid responsiveness to market demand through the fit between market requirements and operations capabilities (Slack et al., 2009). Despite the importance of this work, empirical research on how to achieve and develop this integration is still limited in comparison with conceptual work (Felekoglu et al., 2013; Paiva, 2010; Sharma, 2013; Song et al., 2010). Therefore, this study is an attempt to narrow this gap by investigating why and how to manage the marketing and operations functional relationship effectively in order to become more market oriented. The framework of this research consists of four phases namely; the needs (reasons for integration), the methods (cross-functional teams), the development (potential problems), and the achievement (delivery priority). This framework represents a strategic imperative for developing the delivery performance of an organisation based on the fit between strategy (time-based strategy), organisational structure (cross-functional integration), and environment (the competitive position) (Lenz, 1980; Miller, 1988). Empirically, due to the need to develop the performance of Iraqi public industry sector, two Iraqi public textile organisations were chosen as case studies to conduct this project by using semi-structured interviews and direct observation to gather data. According to the findings of this research, it can be argued that this study would be an approach to implement market orientation in the Iraqi context albeit one which is difficult to execute.



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Introduction**

In this chapter, the background to the research area and the rationale for the study are presented. Following this, the research aim and objectives are established, and the research questions are developed. The expected contributions of the study are also provided with a brief summary about the other chapters of the thesis: Literature Review, Methodology, Findings and Discussion, and Conclusion and Recommendation.

In today's manufacturing environment, due to the variety and complexity of products, and the progress of technology, organisations are forced to be more responsive to the pressure of dynamic markets through developing, producing and delivering products rapidly and before competitors (Bendoly et al., 2012; Gattiker, 2007). As a result of this, organisations may struggle to be market oriented in order to deliver superior value to customers through improving methods to meet their expectations (Jyoti & Sharma, 2012). Since the end of the 1990s, cross-functional coordination (CFC) has received great attention from many scholars in different specializations. This is because of its crucial role in developing the competitive performance of market-oriented organisations (Bartosek & Tomaskova, 2013; Bendoly et al., 2012; Troy et al., 2008). According to market orientation culture, organisations need to achieve cooperation and coordination among all departments which share and utilize market information to recognize and respond to customers' preferences for competitive advantages (Taleghani et al., 2013). However, this is difficult to implement (Gonzales et al., 2004; Jyoti & Sharma, 2012).

According to the organisational contingency-based principle, the performance of an organisation relies on the "fit" between organisational structure, the firm's strategy, and the environment (Lenz, 1980; Miller, 1988). In this regard, cross-functional integration (CFI) is an important aspect of organisational structure in terms of the types and level of the collaborative interactions among the different functional areas (Lawrence & Lorsch, 1986; O'Leary-Kelly & Flores, 2002). In addition, the need to achieve integration between the specific functions depends on the competitive position of the firm. For instance, if an organisation competes against time to attain delivery priority, it is necessary for marketing

and operations functions to be integrated at this stage (O'Leary-Kelly & Flores, 2002). Delivery priority means the ability of a firm to deliver its products in the right place where customers need it rapidly and before competitors (Schroeder, 1989). The reason for choosing marketing and operations areas to be convergent to achieve delivery priority is that the majority of time is consumed beyond marketing and operations departments where delays can appear (Stalk, 1988; Stalk & Hout, 1990).

Additionally, marketing and operations areas represent core functions of manufacturing organisation by which customer preferences can be identified and satisfied through employing sufficient production capabilities (Brettel et al., 2011; Slack et al., 2009). Therefore, only these two functional areas directly contribute to delivering value to the customer. Other functions such as accounting and human resources make indirect contributions to create value for the customer (Porter, 2004; Piercy, 2007). Due to the traditional design of organisations, the marketing and operations relationship can be problematic because of the conflict that may occur between the two areas. The reason for this conflict is the different functional objectives and responsibilities of marketing and operations groups (Hill, 2005; Piercy, 2007; Shapiro, 1977). Therefore, today's organisations focus on how to achieve collaboration and coordination between these two functions in order to improve their competitiveness (Piercy, 2010; Tang, 2010).

Many studies (e.g., Hausman et al., 2002; O'Leary-Kelly & Flores, 2002; Paiva, 2010; Prabhaker, 2001; Swink & Song, 2007; Tang, 2010) emphasised the importance of marketing and operations integration to develop the performance of firms. Despite the empirical research that has been conducted on this interface since 2000, such as Gattiker, (2007); Hausman et al. (2002); Kulp et al., (2004); Nahm et al. (2003); Sawhney & Piper (2002); and Song et al., (2010), there is a need for more empirical work on marketing and operations integration for it to be better understood (Marques et al., 2014; Sharma, 2013). In order to achieve this understanding, this empirical study comprehensively examines the reasons for interfacing marketing with operations. In addition, the previous empirical research on marketing and operations integration focuses on how the two functions depend on each other in different aspects and models (e.g., Hausman et al., 2002; Kulp et al., 2004; Sawhney & Piper, 2002; Tang, 2010) and also emphasises the importance of exchanging knowledge for this joint work (e.g., Calantone et al., 2002; Hirunyawipada et al., 2010; Horwitz, 2005). However, empirical research on how to achieve the integration across the functional boundaries of marketing and operations areas by the use of different mechanisms is limited

(Felekoglu et al., 2013; Song et al., 2010). Furthermore, there is a need for investigating the problems that may occur when marketing and operations groups work together, for these problems to be solved or avoided for better integration (Paiva, 2010). In order to narrow these expected gaps, a comprehensive framework has been developed to investigate marketing and operations integration in terms of the needs, methods, development, and achievement under the umbrella of market orientation. This framework is conceptualized according to the literature review to answer the research questions, and researched in the field in order to achieve the research aim and objectives.

Empirically, despite Iraqi public manufacturing organisations producing high quality products according to international standards, today the demand for local products has dramatically decreased compared with foreign imported products due to the fierce competition in the post war Iraqi market (Qaisi, 2013). This is because of the absence of governmental support for the public industry sector, which is not keeping up with the technological progress in global markets due to the political and economic situation in Iraq (Iraqi industry ministry, 2013). Consequently, there is a great need for developing the competitive performance of this sector to be able to survive and grow in the market. Two textile manufacturing organisations have been chosen for this study as important firms of the Iraqi public industry sector which need to compete against time. This study aims at developing delivery competitiveness in the Iraqi context through using cross-functional teams (CFTs) by which marketing and operations areas can be integrated to become more market-oriented. In order to achieve the research aim and objectives, semi-structured interviews and direct observation were adopted to gather valid qualitative information from the two case study organisations. In this regard, 21 interviews were conducted face-to-face with marketing, operations, and R&D managers as the main members of CFTs. Furthermore, direct observation was carried out in the factories and sales centres of both case study organisations.

## 1.2 Research Background

### 1.2.1 Iraq (Geography)

Iraq is one of the Arab countries in the Middle East located in Western Asia. It is bordered by Turkey to the north, Jordan and Syria to the west, Iran to the east, as well as Saudi Arabia and Kuwait to the south as shown in Fig 1.1. The capital of this country is Baghdad which is located in the middle of Iraq. The republic of Iraq has a land area of 437,072 sq. Km and it has a population of 34 million. This country has an important strategic location in the world because it connects three continents, namely Asia, Europe, and Africa. There are two rivers by which Iraq is watered, the Tigris and Euphrates. Iraq is one of the rich countries in the Middle East because it has many natural resources such as petroleum, natural gas, sulphur, and phosphate (Sami, 2014). Furthermore, this country has a number of economic activities such as industry and agriculture (Iraqi Institute for Economic Reform, 2010). But the main resource of the Iraqi economy is petroleum which represents most of the government budget (Mohamed, 2011). This is because the Iraqi petroleum reserve represents 12% of global reserves (Industry sector team, 2009).

**Figure 1.1 Map of Iraq**



Source: Heinz, H. J. & Merle-Smith, A. (2016).



### **1.2.2 Iraqi Transformative Industry Sector**

One of the most important industry sectors in Iraq is the transformative industry, which means transforming raw materials to the final goods for human use (Shabaa, 2010). Many scholars have stressed the importance of this sector to develop the Iraqi economy due to its contribution to “Gross national product” (GNP). In other words, this industry sector significantly contributes to satisfying Iraqi market demand through the local products. This contribution depends on how it exploits the available production requirements such as manpower and raw materials to be an economic resource (Mahmud, 2014; Mohamed, 2006). Since 1958, the Iraqi industry development has begun with governmental support for the private industrial enterprises by granting tax/tariff exemptions to investors in this sector. In addition, during the 1970s, as a result of the increase in petroleum revenues, Iraq achieved high growth rates in the national economy because of the governmental investments in economic sectors such as industry and agriculture, as well as the services sector (e.g., education, health etc.). This economic development contributed to improving the transformative industry, particularly in the public sector, through establishing a number of public manufacturing organisations in different fields such as food and textiles (Al-Shawi & Mohamed, 2011; Mohamed, 2006). Therefore, the relative contribution of this industry to Gross Domestic Product (GDP) over the period of the 1970s ranged from 8% to 10% (Al-Issawi, 2015). However, in 1980, due to the war against Iran, most of the governmental budget and production resources were devoted to military activities and petroleum exports were stopped many times over the period from 1980 to 1990. As a result of this, the performance of the transformative industry sector was negatively influenced. Consequently, the relative contribution of this sector to GDP decreased to 6.01% in 1987 and then to 5.19% in 1990. After 1991, the Iraqi economy deteriorated for more than a decade because most of the economic sectors such as the industry sector were negatively impacted due to the economic embargo on Iraq. Despite this effect on the transformative industry, the relative contribution of this sector to GDP increased to 6.6% in 1999. The reason for this is the governmental support for the private industry sector through exempting the manufacturers in this sector from all taxes in order to satisfy the local demand for goods (Mahmud, 2014; Mohamed, 2011; Mohamed, 2006).

After the war and the overthrow of the regime in 2003, Iraqi economic activities were limited for distribution and consumption until 2005 when the productive sectors restarted in order to produce goods and services (Mohamed, 2011). Due to the unrest and the deterioration of the security situation in Iraq, most manufacturing companies stopped working. Therefore, the contribution of the transformative industry sector to the GDP dramatically decreased to 0.9% in 2003 (Bureihi, 2011). Through the governmental support for the large manufacturing companies in 2004, this sector resumed working in 2005. Despite the investments and partnerships with global organisations that were supported by the Iraqi government to develop the transformative industry, its contribution to GDP did not exceed 3.9 % in 2008 (Iraqi planning ministry, 2009). This is because of the insufficient budget for industry development and the increase in production requirements costs, especially in the public sector (Mahmud, 2014). Since 2003, Iraq has become an open and free market to international companies without determinations or constraint. As a result of this, Iraqi productive sectors such as the transformative industry sector faced fierce competition and dumping (exporting goods to Iraq at prices lower than the home-market prices) (Ethier, 1982), particularly with the insufficient governmental support for the local product (Mohamed, 2011). Furthermore, manufacturing companies of this sector are not able to compete against the global organisations because they did not keep up with technological progress and the development in global markets due to the political isolation of the previous regime in Iraq (Al-Khalaf, 2013). Therefore, the Iraqi government devoted 5% of the budget to develop the transformative industry over the years from 2009 to 2014 through governmental investments in this sector (Iraqi planning ministry, 2009).

However, in the second half of 2014, due to the sudden decrease in petroleum prices, the Iraqi government faced an inability to balance its budget, because of its reliance on the petroleum sector as the main source for its revenues. For these reasons, there is a great need for developing the other economic sectors such as industry in order to support the Iraqi economy and to overcome national budgetary deficits (Ali, 2012). Many economic studies (e.g., Mohamed, 2011; Salim, 2012; Merza, 2013; Iraqi industry ministry, 2013) emphasized the importance of economic diversification to cope with the economic challenges in Iraq through improving the productive activities of the important economic sectors such as the transformative industry sector.

As stated by Mohamed (2011); and Salim (2012), the industry sector is one of the most important Iraqi economic sectors which represent a cornerstone of achieving economic development. This is because of the significant relationship between this sector and other economic sectors, and its importance for exploiting the resources of production such as raw materials and manpower to meet the local demand for the final goods. In addition, the transformative industry sector is necessary for manufacturing production requirements for other sectors such as agriculture. As mentioned by Al-Shammari, the Iraqi local market has increasingly relied on imports to satisfy the increased demand of this market. Therefore, the government struggles to improve the transformative industry sector as one of the most important strategic choices for economic development in Iraq (Al-Shammari, 2016). In addition, to support the local product, a number of laws have been enacted by the government, such as imposing a tax/tariff on imports (Al-Quraishi, 2011). Furthermore, banking facilities have been provided by the governmental banks for private industrial enterprises in Iraq (Industry sector team, 2009).

The transformative industry sector in Iraq includes many different types of industries which can be categorised into groups as shown in Table 1.1 with the numbers of their companies and employees.

**Table 1.1 The number of companies and employees of Iraqi transformative industries in 2014.**

Industrial group	Number of companies			Number of employees
	Small	Medium	Large	
<b>Food and beverages</b>	5193	56	145	31419
<b>Textile, clothing and leather</b>	2744	3	8	26188
<b>Wood and furniture</b>	5291	1	3	7075
<b>Paper and printing</b>	95	6	9	1491
<b>Mineral</b>	7385	38	374	48270
<b>Chemical</b>	5	5	10	11452
<b>Other transformative industries</b>	79	9	20	14915
<b>Total</b>	20792	118	569	140810

Source: Iraqi planning ministry. (2016). Industrial organisations report. Central statistical organisation. Baghdad. Available at: [www.cosit.gov.iq/ar/](http://www.cosit.gov.iq/ar/)

According to the classification of companies' size that is used by Iraqi planning ministry, the number of employees can be ranged from 1 to 9, 10 to 29, and more than 29 employees in three categories: small, medium, and large organisations respectively. In accordance with this classification and the data in the above table, 95% of transformative industrial companies in Iraq are small, 0.7% are medium, and 4.2% are large. In this respect, the first category consists of a huge number of small production units, but the second group includes few companies. The third category is in the second place in terms of the number of organisations, but it has the largest number of employees (Shabaa, 2010). In 2014, the number of large manufacturing companies in the private sector was 511 and the number of employees was 22121; while in the public sector, it was 58 and 78236 respectively (Iraqi planning ministry, 2016). Despite the large number of companies in the private sector, the labour force and investments in the public sector are bigger (Shabaa, 2010). Therefore, the Iraqi public industry sector produces 90% of the total of industrial products (Iraqi industry ministry, 2013).

### **1.2.3 Iraqi Public Manufacturing Organisations**

Since 1964, due to the monopoly of manufacturers on goods to be sold at high prices in the private sector, the Iraqi government has paid great attention to the public transformative industry sector, particularly with the nationalisation of Iraqi petroleum (Al-Shawi & Mohamed, 2011; Mohamed, 2006). Therefore, the development of this sector began with governmental investments in the public manufacturing organisations, especially when petroleum revenues increased. The focus of this sector was on producing consumer goods to satisfy the local market demand at suitable prices (Merza, 2013). In the 1970s, because of the development of the public transformative industry sector, the relative importance of public manufacturing organisations increased compared with the private sector. Despite the war against Iran in the 1980s, and the economic sanctions on Iraq in the 1990s, the public transformative industry sector remained dominant in the Iraqi market. This is because of the support of the previous regime for the public manufacturing organisations, and the local products (Al-Shawi & Mohamed, 2011). In 2003, most of these organisations stopped working, and the performance of others dramatically decreased due to the post war unrest (Iraqi industry ministry, 2013). As a result of this, strategic plans were made by the Iraqi

industry ministry for restarting the public industry sector (Mohamed, 2011). For this purpose, 33.5 Million GBP was allocated to fund the large public organisations, which resumed working in 2005. In addition, in 2006 and 2007, the government devoted 7.7 and 23 Million GBP respectively for developing the public industry sector, but this funding was insufficient. Therefore, in 2008, 360 Million GBP was allocated for the investments in this sector, which had a significant impact in making partnerships with global companies to update the production lines of public manufacturing organisations (Iraqi planning ministry, 2009). Despite these governmental investments, these firms are still unable to compete against the global companies in market place. The first reason for this is the increase in the cost of production requirements, which led to an increase in the price of local products as opposed to the imported products. Secondly, there is obsolescence of production technology in the public industry sector due to the political and economic situation in Iraq before 2003. The third reason is the negative influence of the economic sanctions on Iraq in the infrastructure such as electricity which is important to the industry sector (Al-Shawi & Mohamed, 2011). Consequently, there is a need to develop the competitiveness of public manufacturing organisations through the effective adoption of market orientation to be able to compete in the market. In this regard, the Iraqi industry ministry made short and long term strategic plans in order to improve the competitive performance of this sector. For this purpose, a collaborative programme has been implemented by the higher education ministry and the industry ministry to encourage researchers to conduct development studies in this respect. The Iraqi public industry sector consists of many large organisations in different fields which are distributed over various regions of this country, as shown in Table 1.2 (Iraqi industry ministry, 2013).

**Table 1.2 Large public manufacturing organisations of Iraqi industry ministry**

<b>Field</b>	<b>Companies</b>
<b>Chemical and petrochemical</b>	Public organisation of paper industries
	Public organisation of batteries
	Public organisation of rubber
	Public organisation of tires
	Public organisation of petrochemical
	Public organisation of mining
	Southern public organisation of compost
	Northern public organisation of compost
	Public organisation of phosphate
	Public organisation of sulphur
<b>Engineering</b>	Public organisation of engineering support
	Public organisation of iron and steel
	Mechanical public organisation
	Electrical Public organisation
	Public organisation of automobiles
<b>Construction</b>	Iraqi public organisation of cement
	Northern public organisation of cement
	Southern Public organisation of cement
	Public organisation of glass and ceramics
	Public organisation of refractories
	Public organisation of construction
<b>Pharmaceutical and food</b>	Public organisation of medicines / Samarra
	Public organisation of medicines / Nineveh
	Public organisation of dairy
	Public organisation of sugar
	Public organisation of vegetable oils
	Public organisation of tobacco and cigarettes
<b>Industrial services</b>	Public organisation of inspection and engineering rehabilitation
	Public organisation of information systems
	Public organisation of systems
	Public organisation of industrial designs and consultations
	Public organisation of design and construction
<b>Textile</b>	Public organisation of clothing
	Public organisation of handmade carpets
	Public organisation of leather industries
	Public organisation of cotton textile / Baghdad
	Public organisation of textile industries / Wasit
	Public organisation of textile industries / Hilla
	Public organisation of wool textile / Baghdad

Source: Iraqi industry ministry. (2013). Development plan of public organisations. Prepared by the advisory board. Baghdad, Iraq. Available at: [www.industry.gov.iq/upload/upfile/ar/191finshreporetnew17-11-2013.pdf](http://www.industry.gov.iq/upload/upfile/ar/191finshreporetnew17-11-2013.pdf)

#### **1.2.4 Middle Eastern Market and MNEs**

As stated by Godley and Shechter, (2008, P. 632), *“Some parts of the globe have remained aloof. Given its economic and political importance, the most glaring omission is the Middle East.”* This is because of the challenges facing multinationals enterprises (MNEs), and the untapped opportunities in the Middle Eastern countries, such as Iraq (Mellahi et al., 2010). Therefore, despite the significant potential of MNEs in the Middle Eastern markets, the foreign direct investment (FDI) in this region is still impeded compared to other developing regions in the world (Apaydin, 2009). Due to the economic and political changes in most Middle Eastern countries, MNEs need to explore the emerging business opportunities in these nations and challenges for entering the region. These opportunities and challenges relate to the economic and social diversity, non-market strategies and entry mode choices, and animosity towards MNEs in the Middle Eastern markets. The diversity of Middle Eastern region is not just in the languages, ethnicities, and religions of their countries. It is also in the political and economic systems of these nations (Mellahi et al., 2010). Because of the market failures and institutional voids in the Middle Eastern countries (Mellahi, 2007), MNEs focus on how to select local partners, and appropriate mode of entry (Mellahi et al., 2010). According to Blaszczyk (2008) and Andersen (2008), who emphasised the significant impact of the political capital in the Middle East on its market, the reason behind the dramatic failure of Middle Eastern market is the need of MNEs to be strongly embedded in the institutional environment, and more adapted to the changes in this environment. As demonstrated by Mellahi et al. (2010), in this region, many choices are offered by MNEs to enter the markets of this region ranging from simple export to fully owned affiliates. The international joint ventures are the dominant entry mode in the manufacturing sector in the region, but there is limited entry via the wholly owned affiliates. Due to the conflicts and wars in the Middle East, MNEs face considerable challenges when operating in this region. As a result of these international and political events in which MNEs can be entangled, one of the notable challenges is the animosity towards products of Western countries or Western MNEs (Mellahi et al., 2010). Bahae and Pisani (2009) have illustrated that due to this animosity, customer behaviour in the Middle Eastern market towards MNEs products has been negatively influenced. In this regard, due to the current competitive position in today's Iraqi market, and the need for developing the manufacturing sector, the Iraqi government opened the door for the public industry sector to make partnerships with international organisations

in developed countries, such as Japan, Italy, and China in order to develop their competitive capabilities (Abd & Atheer, 2016; Hasson, 2016).

### **1.3 Rationale for the Research**

There are some justifications beyond the importance of studying the integration between marketing and operations functions that will be discussed as follows:

#### **1.3.1 The Need for Research into the Iraqi Public Industry Sector**

Today, due to the fierce competition in the Iraqi market, the public manufacturing organisations need to identify their competitive position in order to determine their strategic choice to compete against the foreign organisations for competitive advantage (Boyer and Lewis, 2002). According to this strategic choice, production capabilities should be developed to satisfy customer expectations before competitors (Ahmad & Schroeder, 2011; Slack et al, 2009). However, in the Iraqi public industry sector, the fit between marketing and operations requirements is difficult to attain for two main reasons. The first reason is the negative impact of the war and economic sanctions of Iraq before 2003 on production factors in this sector, such as manufacturing technology (Iraqi planning ministry, 2009). The second reason is the inadequate support of the Iraqi government for the public manufacturing organisations after 2003 (Al-Shawi & Mohamed, 2011). Consequently, a great need for improving the competitiveness of these firms has been generated in order to satisfy customers to be able to survive and grow in the market. Moreover, the Iraqi government encourages the academics and practitioners to conduct studies for this purpose (University of Technology in Iraq, 2013).

Public textile manufacturing organisations, as the most important and oldest organisations in the Iraqi industry sector have been chosen for this research to develop their marketing and operations capabilities through the effective use of CFTs. These organisations clearly need to compete against time as an appropriate strategic choice for developing their competitive performance (Boyer and Lewis, 2002). This is because of the importance and sensitivity of time in the production system of these companies due to their large number of sequential processes which are time-consuming (Slack et al., 2013). Despite the significant positive impact of marketing and operations interface on the delivery performance of manufacturing



companies (Tang, 2010; Paiva, 2010; Hausman et al., 2002; Prabhaker, 2001; O'Leary-Kelly & Flores, 2002; Swink & Song, 2007), no work has been published on marketing and operations integration in the Iraqi context. Therefore, this research comes as an attempt to improve the delivery performance of the Iraqi public textile industry sector through using CFTs, by which the gap between marketing and operations functions can be bridged, with the aim of the organisations becoming more market-oriented.

### **1.3.2 Gap in Knowledge**

Despite the extensive research on marketing and operations integration, such as Calantone et al. (2002); Hausman et al. (2002); Paiva, (2010); Sawney & Piper (2002); Swink & Song (2007); Tang, (2010); and Nahm et al. (2003), there is a need to conduct more empirical work on this interface, especially at the operational level for it to be better understood (Gattiker, 2007; Sharma, 2013). As pointed out by Marques et al. (2014, P. 180), *“there is a need for more knowledge about the interface between areas of marketing and operations. One factor that requires greater knowledge about the interface between these two functional areas is the number of elements involved.”* To narrow this gap, this study empirically investigated the reasons why marketing and operations personnel need to work together in order to achieve rich understanding about the interactions between the two functions.

Although the previous empirical research on marketing and operations integration which concentrates on how the two functions depend on each other in different aspects and models, and also emphasizes the importance of exchanging knowledge to marketing and operations interface, the work on "how" to achieve this integration is limited (Song et al., 2010). Furthermore, Felekoglu et al. (2013) demonstrated that few studies have investigated "how" the integration between different functions such as marketing and operations can be attained by the use of different mechanisms. In addition, there is a need for examining the problems that probably occur when marketing and operations groups work together to achieve better integration (Paiva, 2010). Therefore, this study comes as an attempt to narrow these expected gaps through an empirical investigation, by which light can be shed on how to manage and develop the relationship between marketing and operations functions to make it close and market oriented.

Despite the ability of companies to be market-oriented through the integration and coordination among all their functions (Beverland & Lindgreen, 2007; Taleghani et al., 2013), this is difficult in practice (Gonzales et al., 2004; Jyoti & Sharma, 2012). In addition, there is limited research on the implementation issue of market orientation in the literature (Beverland & Lindgreen, 2007), especially in the developing countries (Attia, 2013). However, cross-functional integration (CFI) relates strongly to the competitive position of firms. In other words, identifying specific functions for the integration relies on the appropriate competitive priorities of an organisation (O’Leary-Kelly & Flores, 2002) namely cost, quality, delivery, flexibility, and dependability (Slack et al., 2010). Therefore, this study represents an attempt to examine how to adopt a market orientation philosophy through the better integration between marketing and operations areas as direct value-adding functions (Piercy, 2007) in the context of CFTs as a superior method to achieve the delivery priority as an important value to customers.

#### **1.4 Key Research Issue**

The aim of this research project is to develop delivery competitiveness of public textile industry sector through the effective use of CFTs in the Iraqi context. This research will be carried out in four main stages (literature review, Framework and propositions development, Case studies, and Theory development) in order to develop a theory through answering the research questions in the field (See Appendix 1). According to the research aim, this study addresses the following issues:

##### **1.4.1 Research Aim**

This study aims to examine how product delivery performance of Iraqi public textile manufacturing organisations can be maximised through utilising CFTs effectively to become market oriented.

### **1.4.2 Research Objectives**

According to the aim of this study, research objectives consist of:

- 1- To investigate the need for interfacing marketing with operations.
- 2- To develop a theoretical framework, to be later developed as a formative guide for managers, in the Iraqi public textile industry sector. This framework will help to understand how to attain integration between marketing and operations by utilising CFTs.
- 3- To identify the potential problems that may occur during the implementation of CFTs in the Iraqi public textile industry sector.
- 4- To investigate the delivery performance of Iraqi public textile manufacturing organisations which utilize CFTs in 2014.

### **1.4.3 Research Questions**

Empirically, as shown in Table 1.3, this project aims to achieve delivery priority in the two case study organisations. To achieve this, the present research will answer the following questions:

- 1- Why should marketing and operations groups work together?
- 2- How can the integration between marketing and operations functions be achieved by using CFTs?
- 3- What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?
- 4- How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?

**Table 1.3 Research aim, objectives, and questions**

<b>Research aim</b>	<b>Research objectives</b>	<b>Research questions</b>
<b>To examine how product delivery performance can be maximised in the Iraqi public textile industry sector through utilising CFTs.</b>	RO1: To investigate the need for interfacing marketing with operations.	RQ1: Why should marketing and operations groups work together?
	RO2: To develop a theoretical framework, to be later developed as a formative guide for managers, in the Iraqi public textile industry sector. This framework will help to understand how to attain integration between marketing and operations by utilising CFTs.	RQ2: How can the integration between marketing and operations functions be achieved by using CFTs?
	RO3: To identify the potential problems that may occur during the implementation of CFTs in the Iraqi public textile industry sector.	RQ3: What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?
	RO4: To investigate the delivery performance of Iraqi public textile manufacturing organisations which utilize CFTs in 2014.	RQ4: How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?

#### **1.4.4 Motivation for Research**

Many years ago the researcher was a manager in one of the case study organisations. It can be argued that this company has sufficient capabilities but managing and exploiting these capabilities is inefficient. The main reasons for this are as follows. First is the problematic relationship between marketing and operations departments. Second, there are a number of weaknesses in planning and implementing marketing and operations strategies which cause a waste of production resources and time because of the bottlenecks, rework, and delays in the production line. As a result, this can strongly impact negatively the product delivery performance of this organisation. Therefore, the researcher believes that there is an opportunity to tackle these problems by the present project. In addition, this study will be helpful for many companies in the Iraqi public industry sector, particularly the textile industry which needs to compete against time due to their large number of sequential processes which are time-consuming. Furthermore, due to the increased importance of marketing and operations integration in developing time-based performance of manufacturing organisations (Hausman et al., 2002; Paiva, 2010; Tang, 2010), a great need has been generated for examining how to improve customer service in delivery through adopting CFTs which are used by case study organisations. However, in this regard, the relevant literature lacks any empirical research on marketing and operations integration (Gattiker, 2007; Sharma, 2013). These needs motivated the researcher to conduct this study as an attempt to narrow the expected theoretical and empirical gaps.

#### **1.4.5 Expected Contribution of the Study**

There are a number of contributions which are achieved through adopting this study as follows:

#### **1.4.5.1 Expected Theoretical Contributions**

The extensive literature of the marketing and operations interface lacks empirical studies on marketing and operations integration (Gattiker, 2007; Sharma, 2013). As mentioned by Marques et al. (2014), there is a gap in knowledge of marketing and operations interface, in particular the method for removing the functional boundaries between these two areas (Felekoglu et al., 2013; Song et al., 2010). Furthermore, Paiva (2010) observed that there is a need for investigating the potential problems that may occur when marketing and operations groups work jointly for better integration as an attempt to overcome these obstacles such as conflict (Parker, 2003), lack of empowerment (Holland et al., 2000), and lack of communication (Nguyen & Rukavishnikova, 2013).

Consequently, the researcher has developed a comprehensive framework to conceptualise the rationale of the integration between marketing and operations functions in relation to the needs, methods, development, and achievement under the umbrella of market orientation. This framework can be a foundation for research to examine the strategic imperative of the convergence between marketing and operations in manufacturing organisations, and also to investigate how to achieve and develop this interface by using CFTs in the Iraqi public textile industry sector. In addition, through the achievement phase of the framework, the researcher investigates how the integration between marketing and operations areas significantly contributes to the delivery priority as an appropriate competitive priority for the two case study organisations. As a result of this, many elements such as the areas and mechanisms for the joint work have been involved in this investigation for greater knowledge regarding marketing and operations interface. More precisely, this research contributes to the knowledge of the integration by building a richer understanding of the relationship and interactions between these two groups, and it shows how the collaborative actions of marketing and operations personnel enable them to create superior value for customers.

Despite the importance of CFI to implement market orientation (Beverland & Lindgreen, 2007; Taleghani et al., 2013), there is a dearth of research on this implementation (Beverland & Lindgreen, 2007), particularly in public local organisations (Cano et al., 2004; Rodrigues & Carlos, 2012) in developing countries (Attia, 2013). Due to the necessity of the consistency between the selection of functions for the integration and the competitive priority (O'Leary-Kelly & Flores, 2002), this research attempts to adopt a market orientation philosophy in a public industry sector in the Iraqi context through utilising CFTs. This is because CFTs

represent a superior method to achieve marketing and operations integration, through the collaboration and information sharing for delivery priority as great value for customers. In this respect, there is a significant relationship between this integration and delivery priority, which means the ability of firm to compete against time in the market (O'Leary-Kelly & Flores, 2002). Therefore, this study shows that the market orientation can be implemented in the two case study organisations based on the fit between the organisational structure (Cross-Function Integration), competitive position (delivery priority), and strategy (time-based strategy) (Lenz, 1980; Miller, 1988; Venkatraman, 1989). In addition, these three elements: cross-functional integration, information sharing, and delivery priority, as a responsiveness to market demand represent the main components of market orientation (Martin & Grbac, 2003).

#### **1.4.5.2 Expected Practical Contributions**

Due to the fierce competition in today's Iraqi market and the great need to develop the competitive performance of public industry sector in Iraq, this research provided fresh and rich insights for the managers into the marketing and operations relationship and how it can be managed for competitive advantages when using CFTs. As a result of the importance of time as a competitive weapon (Lin et al., 2012) and its sensitiveness in the sequential production system of textile industry (Slack et al., 2013), this study shows how delivery capabilities of the two case study organisations can be developed by using CFTs. This is because time savings relates strongly to the marketing and operations integration (O'Leary-Kelly and Flores, 2002), that can be attained when these two groups work jointly within CFTs (Brettel et al., 2011). According to the present study, the focus of these organisations will be on how to use and employ their resources and efforts towards improving marketing and operations capabilities in order to meet market demand quickly and develop greater market orientation. Furthermore, due to the common gap between marketing and operations functions (Piercy, 2007; 2010), this study can be a helpful guideline for managers to deal with the interactions among marketing and operations groups more effectively, in order to bridge this gap in three essential areas: new product development, planning, and dependability of delivery. In addition, this research shows how the two case study organisations can benefit from the full value of the diverse experience and resources of CFTs

through the effective management of their interactions leading to integrated marketing and operations strategies.

In addition, this project empirically investigates delivery performance of the two case study organisations through observing their factories and sales centres in the real context of CFTs applications. Consequently, the findings of these observations reflect to what extent these CFTs can meet market demand by developing time-based capabilities of marketing and operations functions. Therefore, this study will help these organisations to deal with the weaknesses of CFTs applications in both their plants and sales centres in order to manage their efforts and resources more efficiently and adequately towards improving customer service in delivery through more effective applications of these teams. This research is the first empirical study in Iraq by which in depth-investigation is conducted in the Iraqi public industry sector in order to develop their delivery performance through adopting such a framework as posited in the study. In addition, this research contributes to improving the public industry sector, as one of the important economic activities in Iraq, through conducting studies in the context of CFTs for cross-functional integration.

## **1.5 Review of Subsequent Chapters**

### **1.5.1 Chapter 2: Literature Review**

According to the research questions, the literature review theoretically analyses the main aspects of marketing and operations integration. This analysis begins with the need for interfacing marketing with operations. The literature review also provides a conceptual analysis of the methods for achieving and developing this interface in accordance with market orientation perspective. Furthermore, this chapter sheds light on the previous research on the delivery priority, which relates significantly to the integration between marketing and manufacturing areas.



### **1.5.2 Chapter 3: Conceptual Framework**

In this chapter, the conceptual framework of this study that involves four phases: needs, methods, development, and achievement, has been developed in accordance with the literature review. This framework is important for enabling the relationship and interactions between marketing and operations functions to be better understood. Furthermore, it represents a guideline for collecting data in the field.

### **1.5.3 Chapter 4: Research Methodology**

This chapter provides details about the research design and methodology of the present study and their justifications. It explains that the appropriate approach for the research is qualitative, under the realism paradigm as a suitable research philosophy. It is also stated that both inductive and deductive techniques are adopted for this study, with semi-structured interviews and direct observation used as appropriate methods for gathering data from the two case study organisations in the Iraqi public textile industry sector. This chapter also discuss how collected data will be analysed.

### **1.5.4 Chapter 5: Findings and Discussion**

In this chapter, a qualitative empirical analysis of data collected from the two case study organisations is reported. The results of semi-structured interviews and direct observation are also presented and categorised in accordance with the research questions. In addition, through the four sections of this chapter, the study findings are analysed and discussed in the light of the literature review.

### **1.5.5 Chapter 6: Conclusion and Recommendations**

In this chapter, the major findings of the present study are summarised according to the research objectives in order to develop a theory, and the limitations and contributions of the research are also presented. In addition, the final section of this chapter discusses the recommendations for the two case study organisations and for future research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In the previous chapter, the background of the research was described, the rationale for the study was justified, and the research questions, aim and objectives were established. In addition, it presented the expected contributions of the research, and an outline of other chapters. This chapter aims to review the literature on marketing and operations integration in order to highlight the need for this interface, the way in which the integration can be achieved and developed when using CFTs, and their contributions to improving the delivery performance of manufacturing companies. From this review, the researcher developed the conceptual framework of this study to be adopted as a guideline in field.

#### **2.2 The Need for Interfacing Marketing with Operations**

Today, because of fast changing market demand and technological progress, the manufacturing environment has increasingly become more uncertain and complex (Bendoly et al., 2012; Sharma, 2013). As a result, companies are forced to be more responsive to demand before competitors in order to survive and grow in the market (Genc & Benedetto, 2015; Tang, 2010). To achieve this responsiveness, there is a need to match market requirements with a firm's capabilities (Gonzalez et al., 2004; Slack et al., 2009). This particular external fit between the organisation and its environment is the central concern of managers when determining a strategy that a firm follows to be able to meet market demand. However, due to the importance of the convergence among the different parts of the firm as an internal fit to facilitate its external performance (De Wit & Meyer, 2010), it is difficult to attain the external fit because of the gap between marketing and operations functions. This is recognised as a common problem in manufacturing corporations (Piercy & Ellinger, 2015; Piercy, 2007). Therefore, it can be asserted that the operations and marketing interface is critical for the success of the firm in the market (Gonzalez et al., 2004; Hausman et al., 2002; Kim et al., 2010; Paiva, 2010), because of its fundamental role in adopting and implementing a strategy successfully (De Wit & Meyer, 2010).

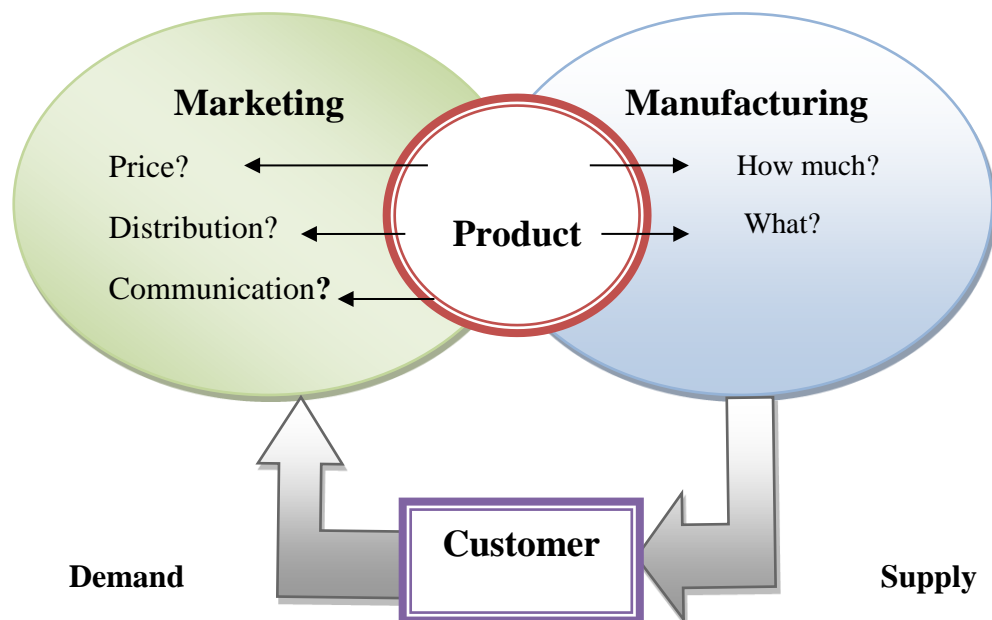
In the past two decades, many scholars (e.g., Crittenden, 1992; Gattiker, 2007; Hill, 2005; Malhotra & Sharma, 2002; O 'Leary-Kelly & Flores, 2002; Parente, 1998; Tang, 2010) have emphasized the significance of interfacing marketing with operations to develop the performance of firms and achieve competitive advantages. In this regard, marketing and operations, as two core functions (Slack et al., 2013) which directly contribute to delivering value to customers (Porter, 2004), need to work jointly when developing innovative products (Brettel et al., 2011; Calantone et al., 2002; Swink & Song, 2007). This is because of interdependent tasks across the stages of marketing and operations processes (Song & Swink, 2002; Swink & Song, 2007). Furthermore, due to the high interdependence between marketing and operations functions, making plans and decisions jointly by the two groups can reduce uncertainty, thus more optimally matching demand to supply (Tavares Thome et al., 2012). In addition, the convergence among marketing and operations functional areas contributes to meeting market demand more efficiently (Marques et al., 2014). This can be enhanced by marketing and operations employees adopting time-based strategies which can improve the dependability of delivery by organisations (Kim et al., 2010). In order to shed light on the strategic imperative of interfacing marketing with operations, it is necessary to delve into the relationship between the two areas and their interactions.

### **2.2.1 The Nature of the Marketing and Operations Relationship**

According to the usual work division in manufacturing organisations, marketing and operations functions as a central part of the activity system or value chain (De Wit & Meyer, 2010) represent the two key 'value adding functions' (Piercy, 2007). The activity system is an integrated set of value creation processes for supplying product offerings (De Wit & Meyer, 2010). As distinguished by Porter's (1985) value chain, there are two main types of activities: primary activities which are involved in the physical creation of the product and its sale and delivery to the customer, and support activities which facilitate the primary process, by providing the different resources such as technology and human resources. The primary activities represent core functions of a firm including operations and marketing areas (De Wit & Meyer, 2010). This is because these functional areas directly contribute to creating and adding value to customers while it can be argued that other functions have indirect contributions to the production process (Piercy, 2007; Porter, 2004; Yu et al., 2014). Furthermore, a firm implements its task through marketing and operations functions which constitute the interface between this producing company and the purchasers when selling and

delivering products (Hill, 2005). In this respect, marketing as an external functional area is responsible for identifying what customers prefer to purchase in order to stimulate the demand. On the other hand, the responsibility of operations as an internal functional area is to meet market demand through utilising production capabilities efficiently and sufficiently at minimum cost. Because of these different responsibilities, they have various functional objectives as separated departments (Gonzalez, et al., 2004; Nath et al., 2010; Tang, 2010). The marketing group focuses on how to generate and stimulate demand for the firm's products, through implementing the sub-functional programmes of marketing strategy that involve pricing, distribution, and communications etc. Operations personnel, in turn, concentrate on supply regulation in order to satisfy market demand by adopting an appropriate manufacturing strategy for defining how and what to manufacture (Crittenden et al., 1993; Nath et al., 2010; Song & Swink, 2002). Therefore, as Crittenden et al., (1993: P. 300) mentioned, *“the two functional areas overlap on the issue of the firm's product”*. As a result of this overlap, marketing and operations decisions have a concurrent impact on the customer as illustrated in Figure 2.1.

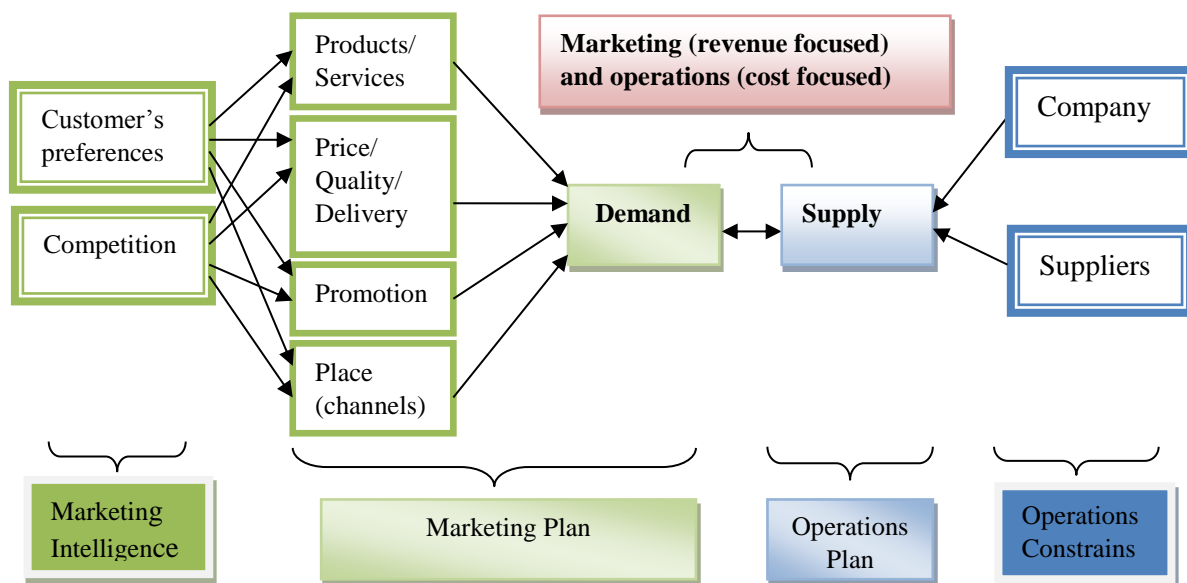
**Figure 2.1 Marketing and manufacturing converge on product decision**



Source: Crittenden et al., (1993, p: 300)

As a result of these different objectives and responsibilities, marketing and operations as separated departments tend to make their decisions and plans separately in a traditional planning process in which they concentrate on achieving their functional goals (Pal et al., 2007; Tang, 2010). In this regard, the marketing group relies on market information regarding customer and competitors to make plans and decisions on the demand involving the kind of product, price, channel, and place in order to increase revenue. On the other hand, according to the marketing plan, operations people produce a tactical plan for employing and using production resources and external suppliers' capabilities at lowest cost to satisfy market demand, as shown in Figure 2.2 (O'Leary-Kelly and Flores, 2002; Swink & Song, 2007; Tang, 2010).

**Figure 2.2 Traditional marketing/operations interface**



Source: Tang, (2010, p: 24)

In the long term, the marketing group predicts market demand depending on their information about customer needs and competition while operations personnel rely on these forecasts to manage capacity, facilities, technology in order to fulfil market demand. But in the short term, operations people receive information from marketing people concerning what, how much, and when to produce. Furthermore, after the product has been provided by operations

personnel, the marketing group, in turn, determines price, markets and distributes the product, thus marketing and operations tasks are highly interdependent (Hausman et al., 2002; Piercy, 2007; Song & Swink, 2002; Swink & Song, 2007). As Shapiro, (1977) reported, there are a number of areas of this interdependency, as set out in Table 2.1.

**Table 2.1 The areas of interdependency between marketing and manufacturing**

<b>Areas of interdependency</b>	<b>Marketing responsibilities</b>	<b>Manufacturing responsibilities</b>
<b>Capacity planning and sales forecasting in long-term</b>	Forecasts of total market demand	How much capacity required and what extra equipment
<b>Production schedules and sales forecasts in short-term</b>	Special needs of customers	Frequent changes in production scheduling
<b>Inventory and delivery</b>	Fast product delivery	Smooth production and lengthen runs
<b>Quality assurance</b>	New product designs	Quality standards
<b>Breadth of product line</b>	A full line supplier	Keeping product line narrow
<b>Cost control</b>	Flexible pricing	Reducing costs
<b>New product introductions</b>	Increasing sales and profitability	New processes and new equipment

Source: Adapted from Shapiro, (1977, p: 105-108)

Due to the high interdependency between marketing and operations departments and the mutual impact of their decisions on each other, the relationships between the two groups could be problematic. This is because of their different functional responsibilities and objectives, which may lead to conflict between them (Crittenden et al., 1993; Hill, 2005; Piercy, 2007).

### **2.2.2 Conflict between Marketing and Operations groups**

Despite the links between marketing and operations areas, *“the reality is often far removed from what should be the desired goal of those involved”* (Hill, 2005, P. 46). Several studies have dealt with the conflict between marketing and operations personnel as a common and classical problem in manufacturing organisations (e.g., Kim et al., 2010; Omurgonulsen & Surucu, 2008; Piercy, 2007; Shapiro, 1977; Tutek & Ay, 2000). Shapiro (1977: p.104) has

addressed this problem in the question “Can marketing and manufacturing coexist?” He illustrated that conflict can cause dangerous effects on a firm’s performance due to the unbalanced orientation of marketing and operations areas. In other words, the company may focus on market requirements but ignore manufacturing effectiveness or vice versa. Therefore, the orientation should be towards generating sufficient demand and employing sufficient production resources efficiently to meet market requirements rapidly and successfully (Shapiro, 1977). As Marques et al. (2014) demonstrated, the competitive performance of an organisation can be significantly influenced by the decisions of marketing and operations areas. Consequently, collaboration and coordination between the two groups is necessary to compete in the market place, but this is difficult to achieve, as has been proven in practice (Crittenden, 1992; 1993; Piercy, 2007).

In addition, the problematic relationship between the two functional areas relates significantly to the market conditions (Gonzalez et al., 2004). Therefore, disagreements among marketing and operations people are more likely to occur when companies face intense competition because of the rapid changes of market demand (Tang, 2010). As mentioned by Tang (2010), conflict may happen when dynamic market demand motivates marketing people to make modifications in a product’s characteristics; whereas production personnel do not desire these changes because of the inherent process of operations and to avoid the increase in cost. In addition, predicting market demand by marketing personnel inaccurately can lead to increased production costs or can create problems in customer retention, causing disagreements among people of these two areas (Tang, 2010; Yu et al., 2014).

One of the most important aspects of conflict is the organizational culture of marketing and operations people who have different and opposed ideas about each other. On the one hand, marketing personnel ask about their manufacturing counterparts: “why cannot they become market oriented or customer oriented?” On the other hand, manufacturing people think that the marketing group needs to understand operations, profits and costs (Piercy, 2007; Shapiro, 1977). Therefore, these two groups need to converge through a shared understanding of their characteristics and the firm's goals (Piercy, 2010). The collaboration between marketing and operations personnel is necessary in eight problem areas in which conflict can occur, as shown in Table 2.2 (Piercy, 2007; Shapiro, 1977). In addition, there are seven main reasons for the conflicts between marketing and operations, namely (i) conflicting reward systems (ii) (iii) different backgrounds and philosophies (iv) functional separation (v) politics and resources allocation, (vi) management failure, and (vii) academic failure (Piercy, 2007).

**Table 2.2 Marketing/Manufacturing areas of necessary cooperation but potential conflict**

<b>Problem area</b>	<b>Typical marketing comment</b>	<b>Typical manufacturing comment</b>
<b>1- Capacity planning and long- range sales forecasting.</b>	“Why don’t we have enough capacity?”	“Why didn’t we have accurate sales forecasts?”
<b>2- Production scheduling and short-range sales forecasting.</b>	“We need faster response. Our lead times are ridiculous.”	“We need realistic customer commitments and sales forecasts that don’t change like wind direction.”
<b>3- Delivery and physical distribution.</b>	“Why don’t we ever have the right merchandise in inventory?”	“We can’t keep everything in inventory.”
<b>4- Quality assurance.</b>	“Why can’t we have reasonable quality at reasonable cost?”	“Why must we always offer options that are too hard to manufacture and that offer little customer utility?”
<b>5- Breadth of product line.</b>	“Our customers demand variety.”	“The product line is too broad- all we get is short, uneconomical runs.”
<b>6- Cost control.</b>	“Our costs are so high that we are not competitive in the marketplace.”	“We can’t provide fast delivery, broad variety, rapid response to change, and high quality at low cost.”
<b>7- New product introduction.</b>	“New products are our life blood.”	“Unnecessary design changes are prohibitively expensive.”
<b>8- Adjunct services such as spare parts inventory support.</b>	“Field service costs are too high.”	“Products are being used in ways for which they weren’t designed.”

Source: Shapiro, (1977, P: 105)



Therefore, the joint work of marketing and manufacturing groups is crucial when making plans and implementing strategy in order to satisfy customers (Gonzalez et al., 2004; Hausman et al., 2002; Tang, 2010). Indeed, production can be inefficient and customers can be dissatisfied if there is a gap between the two functional areas (Ho & Tang, 2004). Consequently, it is necessary to manage the interactions between marketing and operations effectively in order to bridge this gap (Gonzalez et al., 2004; Hausman et al., 2002; Piercy, 2010).

### **2.2.3 The Importance of Marketing and Operations Convergence**

In the extensive literature on marketing and operations integration, many scholars (e.g., Bendoly et al., 2012; Crittenden, 1992; Gonzalez et al., 2004; Hausman et al., 2002; Jassawalla and Sashittal, 2006; O’Leary – Kelly and Flores, 2002; Paiva, 2010; Prabhaker, 2001; Sharma, 2013; Swink & Song, 2007; Troy et al., 2008) have stressed the importance of a marketing and operations interface to develop the competitive performance of manufacturing companies. As mentioned by Hausman et al., (2002), these organisations can improve their competitive position and increase their profits through the integration between marketing and operations functions, which plays an important role in formulating and implementing business strategy. The reason behind this significance is the necessity of understanding the dynamics of the external environment of a firm and the capabilities of its internal environment by sharing information and experience and coordinating activities of the functional areas of an organisation, particularly marketing and operations functions when formulating strategy (De Wit & Meyer, 2010; Hausman et al. 2002). In addition, making plans and decisions by the two groups jointly enhances the ability of companies to achieve competitive advantages. Furthermore, integrating marketing and production plans and decisions could be more beneficial for managers in important areas such as new product development and strategic planning (Malhotra & Sharma, 2002; O’Leary – Kelly and Flores, 2002; Tang, 2010). For instance, integrated sales and production plans can contribute to achieving the balance among inventory, delivery promises, and operations costs (Genin et al., 2005).

As stated by St. John and Hall (1991), these integrated decisions have significant impact on determining cost structure, service reputation, and quality performance of manufacturing corporations in accordance with their competitive priorities. In addition, they highlighted the importance of the coordination between marketing and operations managers to make a decision on the differentiation among competitive priorities. This is because if this decision is inconsistent with the competitive position of the company, efforts and performance could be negatively influenced. Moreover, the interactions among the two functional areas must be consistent with the current competitive position in order to develop a firm's performance (Hayes, 2002). Additionally, as found by Paiva (2010), the most competitive manufacturing companies may struggle to be able to develop their performance in cost, quality, delivery, and flexibility through the high level of marketing and operations integration. Brettel et al. (2011) demonstrated that the marketing and operations interface makes a significant contribution to relating product innovation to the market (target market and customer expectations) and process (manufacturing methods and techniques). Furthermore, this integration positively impacts the efficiency and effectiveness of new product development (NPD) projects. In addition, through integrating marketing and production capabilities, manufacturing companies can develop their competitiveness (Kamboj et al., 2015; Yu et al., 2014).

#### **2.2.4 The Rationale behind Marketing and Operations Integration**

As stated by Hausman et al. (2002), there is a limited consensus in the literature on the reasons for interfacing marketing with operations when formulating and implementing business strategy. In this respect, there are three initial and overlapping reasons behind this integration. First, due to the high complexity and interdependency that emerge from the planning activities of marketing and operations functions, these two groups strongly need to make their strategic decisions jointly, through for instance, developing production facilities to meet the new characteristics of product design (Krishnan & Ulrich, 2001). Second, the combination of marketing and production capabilities can be critical for implementing business strategy effectively (Hausman & Montgomery, 1997; Kamboj et al., 2015; Yu et al., 2014). Furthermore, matching production capabilities to market requirements can lead to improving the competitive performance of a firm (Devaraj et al., 2001). Third, companies are

already adopting cross-functional strategic programmes such as Just in time (JIT) and Total quality management (TQM) for executing their functional strategies (Karmarkar, 1996).

According to Tang (2010), marketing and operations functions as core functions (Marques et al., 2014; Slack et al., 2013) make significant direct contributions to creating and delivering value to customers. Therefore, their integration is critical to improve various differentiation measures for competitive advantages, as shown in Table 2.3. This interface significantly contributes to satisfying customers by producing excellent value (Piercy, 2007).

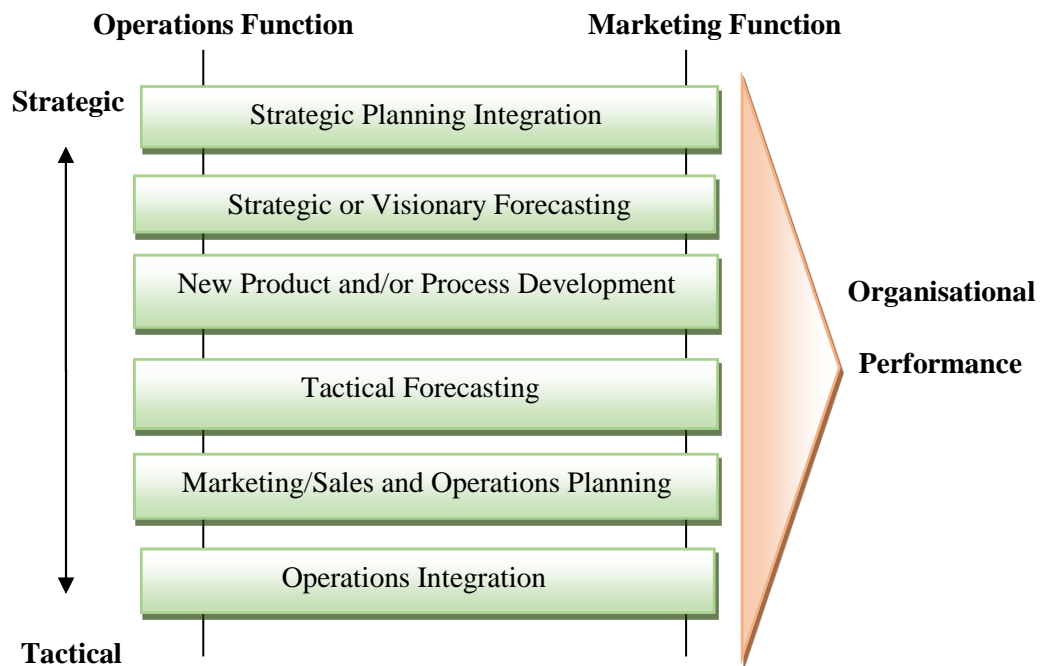
**Table 2.3 The creation of value through marketing and manufacturing**

<b>Marketing</b>	<b>Manufacturing</b>	<b>Differentiation measures</b>
<b>Establish the expectations of customer</b>	Make customer consider the value	Core values: Product, delivery, quality, price, etc.
<b>The priority for value creation</b>	The priority for value delivery	Additional values: Product variety, fast delivery, delivery on time, response time with after sales services.
<b>Stimulate customer demand by using marketing instruments</b>	Satisfy customer demand by manufacturing mechanisms	Customer service quality

Source: Tang (2010, p: 23)

According to Hausman et al. (2002), manufacturing organisations need to attain integration between marketing and operations strategies when formulating their overall business strategy. In addition, Malhotra and Sharma (2002) pointed out that marketing and operations groups should make their decisions together in six areas at strategic and tactical level to improve the organisational performance of their company, as shown in Figure 2.3. Through this interface, market dynamics will be known to the operations group and also production capabilities will be familiar to the marketing personnel. Moreover, this can lead to the “right” customer expectations being set by marketing and the “right” value being promised and created by operations (Tang, 2010).

**Fig 2.3 Marketing /Operations integration framework within a firm**



Source: Malhotra & Sharma, (2002, p: 215)

Additionally, making the strategic plans and decisions by marketing and operations people together can be beneficial for a manufacturing organization in several areas, as set out in Table 2.4 (O’Leary-Kelly and Flores, 2002). Indeed, the decisions of marketing and operations areas have mutual impact on each other (Hill, 2005; Shapiro, 1977). For example, making changes in the characteristics of an existing product requires unique modifications in the production system of a company (O’Leary-Kelly and Flores, 2002).

**Table 2.4 Key decision areas between marketing and operations**

Decision area	Functional domain	
	Operations	Marketing
<b>Process and product development</b>	Determining changes to existing production process capabilities Development of new production processes capabilities	Determining changes in product design specifications  Developing new product design specifications
<b>Operations and marketing planning</b>	Determining long-term capacity requirements (resource planning) Developing long-term production plans (production planning)	Developing long-range demand forecast  Developing sales plans Determining the timing of product promotions

Source: O’Leary-Kelly and Flores, (2002, p: 223)

According to Crittenden et al. (1993), marketing and operations strategies should be convergent in the three main areas in which the collaboration between the two functions is necessary: (1) managing diversity (e.g., product line length/breadth, product customization and product line changes), (2) managing conformity (e.g., product scheduling and capacity/facility planning), and (3) managing dependability (e.g., delivery and quality control).

#### **2.2.4.1 Product and Process Development**

Cross-functional integration (CFI) represents an essential requirement for developing a new product. This is because of the complexity of this process and the need for sharing specific information and resources from different functional areas of the firm in this context (Engelen et al., 2012). Through this participation, uncertainty can be reduced, and the ability to develop a new product successfully can be enhanced (Swink & Song, 2007). Therefore, CFI plays a significant positive role in achieving NPD success (Troy et al., 2008). In the NPD literature, many authors (e.g., Brettel et al., 2011; Kong et al., 2015; Slack et al., 2013; Song & Swink, 2002; Swink & Song, 2007) have illustrated that R&D, marketing, and operations

as core functional areas fundamentally contribute to implementing the NPD process. In addition, in product design and development, marketing and operations people are involved in many highly interdependent specialized tasks (Song & Swink, 2002; Swink & Song, 2007). For example, one of the most critical tasks of marketing personnel is determining and translating customer needs into specifications of product features which require specific manufacturing capabilities to be satisfied (Gonzalez et al., 2004). Due to these interdependencies, the integration between marketing and operations functions is an important requirement for developing a new product successfully (Brettel et al., 2011; Swink & Song, 2007). In this respect, several studies such as Calantone et al., (2002); Guenzi and Troilo (2006); and Hausman et al., (2002) have paid great attention to investigating the contribution of the marketing and operations interface to attaining NPD success, through sharing their resources, experiences, communication, and marketing's knowledge.

Additionally, Bendoly et al., (2012) reported that many researchers (e.g., Brown and Eisenhardt, 1995; Griffin and Hauser, 1992; Kim et al., 2010; and Troy et al., 2008) have emphasised the importance of achieving a high level of marketing and operations integration when developing a new product to identify and satisfy customer preferences quickly. Today, manufacturing companies must constantly make changes in product design to be able to respond to the variety of market demands. Therefore, they need to predict these requirements and to adopt an appropriate manufacturing strategy in order to meet the customer's preferences, taking into account their current competitive position. In this regard, the marketing group plays an essential collaborative role in gathering correct and timely information from the market place in order to define customers' expectations accurately and before competitors (Gonzalez et al., 2004). In addition, if one of the marketing and operations perspectives dominates the other during the NPD process, a firm can fail in new product launches in terms of either target market needs or product delivery. Hence, integrated marketing and operations strategies represent a strategic imperative for developing a new product successfully and rapidly (Song & Swink, 2002).

#### **2.2.4.2 Marketing and Operations Planning**

In traditional manufacturing organisations, due to the various responsibilities and objectives of marketing and operations groups, they tend to make their plans and decisions in a discrete set, resulting in suboptimal plans and conflict (Tang, 2010). This is because of the high interdependence of marketing and operations tasks, and their inherent uncertainty (Gattiker, 2007; Sharma, 2013). Therefore, these two groups need to make their plans and decisions together with coordination (Hausman et al., 2002, Tang, 2010). In addition, this coordinated planning underpins the ability of a firm to match demand to supply (Hausman et al., 2002; Oliva & Watson, 2011; Tuomikangas & Kaipia, 2014). Consequently, in the production environment, the joint work of marketing and operations groups has frequently played a crucial role in production planning (Parente, 1998) through the fit between production capacity and market demand (Berglund et al., 2011). Furthermore, in some cases, fuller cooperation and coordination among marketing and operations people is necessary for solving production scheduling problems (Tang, 2010).

In long term production planning, managing capacity relies on identifying when and by how much the capacity levels should change. Furthermore, capacity management significantly depends on demand forecasts in order to implement sales plans as inputs to this management. Due to this interdependence, an inaccurate demand forecast can lead to reduction or expansion in capacity (Olhager et al., 2001). Therefore, marketing and operations groups need to make integrated plans jointly in order to reduce uncertainty. This integration is critical to attain the balance between demand and supply, and also to achieve conformity between the strategic plans of the firm and its operations plans (Tavares Thome et al., 2012).

Gattiker (2007) indicated that through the effective collaborative activities of marketing and manufacturing functions, corporations can respond to market dynamics rapidly. Yet this leads to an increase in the amount of information that flows across the functional boundaries of the two groups and other parts of firm. Therefore, marketing and operations people need to share and coordinate this information by using an integrated information system such as enterprise resource planning (ERP) as a multi cross-functional system (Hsu & Chen, 2004; Sharma, 2013). Furthermore, by utilizing this system, the uncertainty of marketing and operations information can be decreased. This contributes to attaining conformity between the plans and schedules of marketing and operations functions (Gattiker, 2007; Sharma, 2013). In addition,

by the coordination of shared information, relevant, accurate and timely information can become available for decisions and plans to be made by marketing and operations groups together (Lee & Whang, 2000). As stated by Hausman et al. (2002), strategic plans and decisions being made by these people jointly can result in achieving better coordination. Furthermore, Brettel et al. (2011) pointed out that the effectiveness and efficiency of marketing and operations personnel can be improved through integrating their information and plans. In addition, the performance of supply chain members, especially marketing and operations functions, can be developed by the coordination of shared information. This can enable the two partners to manage their inventory level effectively based on customer demand, thus avoiding or reducing the negative effects of demand variability (e.g. inaccurate demand forecasts, missed production and excessive inventory). Furthermore, marketing and operations areas, as the main partners in the supply chain, share demand information and also work together with other partners as a system, thus they can adapt to the dynamic changes in marketplace (Cho & Lee, 2013).

According to Tang (2010), there is a necessity to match marketing plans to production plans through coordination between the two groups in order to define and meet the right expectations for the right customers through adequate executive operations plans. Hess and Lucas (2004) pointed out that companies can increase their profits when sharing their resources between marketing research groups for developing new products and production personnel for planning.

#### **2.2.4.3 Dependability of Delivery**

In a manufacturing environment, the ability of companies to deliver products to their customers as they promised, relates significantly to the integration between marketing and operations functions. This is because of the important roles of the integrated planning decisions of these two areas, on the performance of an organisation, which adopts a strategy of on-time delivery (O'Leary-Kelly & Flores, 2002). Furthermore, through adopting time-based practices in both marketing and operations, the company can respond to market demand quickly and before competitors due to the convergence between the two functional areas (Kim et al., 2010).



In addition, interfacing marketing with operations is necessary to manage the dependability in terms of the delivery and quality control, which needs effective action by the two functions. In this regard, the integration between marketing and operations strategies contributes to improving product quality and reducing lead time (Crittenden et al., 1993; Sawhney and Piper, 2002).

In the short term, the main aim of operations strategy is to direct operations resources towards satisfying market requirements such as timely delivery of high quality products. Yet in the long term, this strategy must build the capabilities of manufacturing organisations through developing operations resources to attain competitive priorities such as on-time delivery. Therefore, marketing strategy can be convergent with operations strategy when the latter is able to achieve the 'fit' between a market requirements perspective and an operations resource capability perspective (Slack et al., 2009). Today's manufacturing companies have increasingly succeeded in satisfying market demand rapidly through adopting time-based manufacturing strategies such as computer-aided manufacturing (CAM) and computer-aided design (CAD). Through this adoption, the marketing capabilities of delivery can be developed as a result of time-based advantages of manufacturing strategy (Droge et al., 2004; Lin et al., 2012; Prabhaker, 2001). The marketing function in turn, can underpin the ability of a company to achieve dependability of delivery through adopting efficient marketing programmes such as an effective distribution system (Tammela et al., 2008). As found by Lin et al. (2012), utilising the different applications of information technology by operations and marketing departments is critical to deliver products to their customers on time, for instance, using an integrated information system can help these two groups to exchange their information effectively and quickly.

### **2.3 Marketing and Operations Integration: Market Orientation perspective**

This theoretical part discusses the integration between marketing and operations functions in accordance with the philosophy of market orientation. In order to compete in today's dynamic market, manufacturing organisations struggle to be market oriented for creating superior value through understanding customer expectations and adopting superior methods to meet these expectations (Jyoti & Sharma, 2012). This strategic orientation consists of three essential components: collection of market information, dissemination of information and coordination, and rapid responsiveness to this information (Martin & Grbac, 2003). As illustrated by Jain & Bhatia, (2007), market oriented companies need to collect and share information about customers, competitors, and other market conditions across departments through using an integrated mechanism (e.g., integrated information system) in order to understand the target market. Furthermore, this shared information is critical to attain cross-functional coordination (CFC) between different functions of an organisation (Troy et al., 2008). According to Taleghani et al. (2013), organisations can recognize and respond to customer preferences by the coordination among all their functions in order to improve their performance. This coordination is one of the various terms of cross-functional integration (CFI) that has been described as a way to increase effectiveness and efficiency when accomplishing organisational tasks (Gemser & Leenders, 2011).

However, due to the necessity of consistency between CFI and a competitive position, organisations should determine specific functions for the integration according to their appropriate competitive priorities. For example, the integration between marketing and operations functions relates significantly to the delivery priority (O'Leary-Kelly & Flores, 2002). In addition, many scholars (e.g., Tang, 2010; Paiva, 2010; Swink & Song, 2007; Hausman et al., 2002; O'Leary-Kelly & Flores, 2002; Prabhaker, 2001) emphasised the importance of a marketing and operations interface to develop the performance of organisations. This is because of the essential role of these two areas in achieving the fit between market requirements and production capabilities (Slack et al., 2009), and delivering value to customers (Piercy, 2007). As defined by Hausman et al. (2002: p.242), a marketing and operations interface is *"the ability of manufacturing and marketing to work together in strategy implementation"*. In addition, as demonstrated in literature, functional barriers between marketing and operations functions can be removed when sharing innovation, experiences, and resources (Luca & Atuahene-Gima, 2007; Griffin & Hauser, 1996; Horwitz, 2005; Song & Parry, 1997; Tsai & Hsu, 2013), and exchanging information via integrated

information systems (Kulp et al., 2004; Sharma, 2013). As a result of the collaboration and coordination between marketing and operations, companies can respond to market requirements quickly and become more market oriented (Daspit et al., 2013; Tsai & Hsu, 2014). One of the most important strategies to achieve marketing and operations integration is cross-functional teams (CFTs) as an integrated mechanism (Mohsen & Eng, 2013; Topolsek & Curin, 2012).

### **2.3.1 Market Orientation**

Historically, during the industrial revolution, manufacturing organizations were competing with each other to raise their profits by increasing aggregate production whilst minimising unit cost. However, modern day organisations tend to increasingly focus on how to satisfy customer needs in the rapidly changing market-environment. In other words, the trend of competition has tended to shift from a production orientation to a market orientation (Narver and Slater, 1990). Market orientation as a strategic orientation aims to create superior customer value by understanding the customer's expectations and improving superior methods to meet these expectations (Jyoti & Sharma, 2012). This orientation represents a comprehensive organisational culture (Noble et al., 2002) in which all employees should contribute to producing superior value for customers on a continuous basis (Narver et al., 1998). In addition, market orientation as a guideline for implementing the marketing concept (Hooley et al., 2012) has increasingly received great attention from many scholars (e.g., Chelariu, Ouattarra, & Dadzie, 2002; Dong, Zhang, Hinsch, & Zou, 2016; Jain & Bhatia, 2007; Jyoti & Sharma, 2012; Martin & Grbac, 2003; Ramayah, Samat, & Lo, 2011; Taleghani, Gilaninia, & Matloub Talab, 2013; Kam Sing Wong & Tong, 2012). The reason for this increased attention is the significant positive relationship between market orientation and the performance of an organisation (Chin et al., 2013; Jain & Bhatia, 2007; Osuagwu, 2006; Tse et al., 2003). Despite the growing body of the research on market orientation, most of the previous work on this orientation has been conducted in the context of developed countries such as the USA (Attia, 2013; Tse et al., 2003). However, evaluating market orientation may not take into account managerial relevance in other countries due to the different organisational contexts such as culture and values, as well as the external environmental effects (e.g., the level of competition) (Chelariu et al., 2002). Only in recent

years has research on the components of market orientation in developing countries received attention (Attia, 2013).

In the Iraqi context, due to the rapidly changing complex political and economic situation, and the developments of the demand and technology in the global markets, the public manufacturing organisations have come under increasing competitive pressures (Al-Bakri, 2011). As a result of this, the implementation of market orientation within this sector could be difficult to achieve (Mahmoud & Hinson, 2012). Today, the Iraqi government strives to be customer/citizen centred through developing the public industrial sector in order to meet the local demand for products at lower price and high quality, while aiming at profitability, thus contributing to enhancing the Iraqi economy. This development has been enhanced by the partnerships of the Iraqi industry ministry with global organisations within joint ventures (Mahmud, 2014; Merza, 2013; Mohamed, 2006). This reflects the importance of strategic marketing and the need to investigate how to implement market orientation within the public manufacturing organisations (Rodrigues & Carlos, 2010). Many authors (e.g., Chad et al., 2013; Cervera et al., 2001; Modi, 2012; Carlos Pinho et al., 2014) have argued that adopting market orientation in the context of public organisations contributes to providing superior value, thereby high performance. Despite the extensive work on the market orientation concept, research on the implementation of this orientation in public local organisations is still limited (Cano et al., 2004; Rodrigues & Carlos, 2010).

According to Jyoti and Sharma (2012), market oriented organisations have an organisational culture that focuses on how to satisfy customers as a focal point of their operations. Therefore, these companies deal with market orientation as an organisational culture, and such organisations are not merely focussed on processes and activities (Jaworski & Kohli, 1996). In addition, Taleghani et al. (2013) found that there is a significant relationship between market orientation culture and business performance in terms of financial performance, market effectiveness and dominance. As demonstrated by Jain and Bhatia (2007), under the pressure of the dynamic market, market-oriented organisations need to identify and understand the opportunities and challenges in the market in order to develop their skills, knowledge, and resources for unique competencies by which sustainable competitive advantages can be achieved. Furthermore, these competencies should be difficult to simulate by the competitors. In addition, to achieve market success, these companies should be able to meet customers' expectations by their products more effectively and effectively than their competitors (Jain & Bhatia, 2007).

In the extensive literature on market orientation, many scholars have developed definitions of market orientation emerging from the approach of both Kohli and Jaworski (1990) or Narver and Slater (1990). Market orientation was defined by Narver and Slater (1990, P. 20) as an organizational culture that *“most effectively and efficiently creates superior value for customers”* which involves three behavioural dimensions: customer orientation, competitor orientation, and inter-functional coordination. Customer orientation is the culture of an organization by which the customers' preferences can be recognized when customer-oriented company gains and understands information about their present and future needs and wants to share this understanding with all the employees aiming at producing superior value on a continuous basis (Hilman & Kaliappen, 2014; Taleghani et al., 2013). Competitor orientation as an organizational culture refers to the ability of an organization to evaluate the main competitors through considering their short term strengths and weaknesses, and long term capabilities in order to beat them and gain a sustainable competitive advantage (Hooley et al., 2012; Zhou et al., 2009). Inter-functional coordination (IFC), as an important component of market orientation, is the cross-functional coordinated efforts within an organization that contribute to utilizing its resources more effectively and efficiently to deliver superior value to customers (Narver & Slater, 1990; Ross Wooldridge & Minsky, 2002). In addition, IFC enables the employees from different departments of an organization to work together as a team regardless of their conflicting views in order to attain certain objectives (Auh & Menguc, 2005; Tay & Tay, 2007).

As defined by Kohli and Jaworski (1990), market orientation is a set of activities by which marketing concept can be implemented. This implementation relies on three dimensions: (1) Understanding the current and potential needs and wants of customers (2) Sharing this understanding across departments, and (3) Taking actions by the different departments to meet customers' needs. In other words, market orientation refers to intelligence generation, intelligence dissemination, and responsiveness to this intelligence (Dong et al., 2016; Jain & Bhatia, 2007; Kohli and Jaworski, 1990; Martin & Grbac, 2003).

One of the important attributes of a market-oriented firm is the organisation-wide generation of intelligence regarding the customers. Consequently, this intelligence can be generated from many resources, such as engineers and marketing and operations managers who gain good intelligence about customers through their interactions with the external environment (e.g., conferences and scientists) (Eibe Sorensen, 2009). In order to understand the target market, market oriented organisations need to collect and analyse information about

customers, competitors, and external environmental conditions, through utilising information systems (Jain & Bhatia, 2007). This intelligence can be meaningful and valuable if it enables an organisation to respond to market changes (Dong et al., 2016). In addition, market information should be disseminated across departments of an organisation through effective communication in order to share its understanding (Slater & Narver, 1995). Furthermore, market-based organisations should achieve faster responsiveness to market information before competitors through cross-functional coordination (CFC). This responsiveness is to customer dissatisfaction episodes, expected changes in market needs, and to potential competitor actions (Martin & Grbac, 2003).

According to Dong et al. (2016), there is a logical link between these three components, and each of them plays a unique role in implementing market orientation based on market intelligence. Furthermore, the performance of an organisation can be influenced by intelligence generation and dissemination through responsiveness to this intelligence (Dong et al., 2016). In addition, the multi-dimensional construct of market orientation can be adopted in organisations of all sizes (Demirbag et al., 2006; Keskin, 2006; Laforet, 2008), and practically any type of industry (Ellinger et al., 2008), Public (Gainer & Padanyi, 2005; Lonial et al., 2008; Macedo & Carlos Pinho, 2006), and industrial applications (Beverland & Lindgreen, 2007). However, Liao et al. (2011) mentioned that a large amount of research on market orientation has concentrated on industrial markets due to the increased benefits resulting from the implementation of market orientation in this context. Whether market orientation refers to the organisational culture or the implementation of the marketing concept, there is a consensus that market orientation consists of three fundamental elements: *"ongoing and systematic information collection regarding customers and competitors, cross-functional sharing of information and coordination of activities, and rapid responsiveness to competitor actions and changing market needs"* (Martin & Grbac, 2003, P. 26).

However, Gonzales et al. (2004) develop the theory further, by explaining that the market orientation strategy of a firm concentrates specifically on the external environment factors that relate to customer needs, more than the internal factors which influence customer satisfaction. In addition, despite the extensive support for the market orientation concept, its implementation is likely to be difficult (Beverland & Lindgreen, 2007; Gonzales et al., 2004; Tomaskova, 2009). This is because of some specific barriers, such as those related to cross-functional relationships, which impede firm culture and information coordination when adopting market orientation (Tomaskova, 2009).

Despite the importance of market orientation in developing the performance of companies, a limited amount of research has investigated the implementation issue of this orientation in extant literature (Beverland & Lindgreen, 2007). In this respect, Kennedy et al. (2003) examined the changes that occurred during implementing market orientation and identified three methods as strategic tools for executing market orientation, namely: supporting the change by leaders, cross-functional coordination and using market intelligence. Indeed, as illustrated by Jain and Bhatia (2007), cross-functional coordination has become to be considered as a critical requirement for implementing the marketing concept successfully, and delivering much of the satisfaction to the customers through the joint work of all departments of a firm.

### **2.3.2 Cross-Functional Coordination: An Essential Component of Market Orientation**

In the extensive literature on market orientation, it can be noted that the researchers use both cross-functional coordination (CFC) and inter-functional coordination (IFC) terms to express the coordination between different functions of an organisation. As mentioned by Chin et al. (2013), and Taleghani et al. (2013), IFC is one of the most important elements and a dominant component of market orientation. Since the end of the 1990s, CFC has received great attention from many researchers in different specializations, because of its critical role in achieving competitive advantage for a market oriented organisation (Bartosek & Tomaskova, 2013).

As mentioned by Bartosek and Tomaskova (2013), Shapiro was one of the first scholars who explored CFC and its approaches, such as information systems, organisation structure, and culture. In addition, CFC represents the level of the collaboration between the various functions of an organisation, in relation to the corporate culture and information coordination. Furthermore, the achievement of CFC strongly relates to six elements: (1) unified holistic strategy (2) organisational structure (3) management and systems of process (4) information systems (5) informal social culture (6) employees (Shapiro, 1987 cited in Bartosek and Tomaskova, 2013). This is because of the significant impact of these elements on the interactions between the different functions of an organisation (Bartosek & Tomaskova, 2013). As defined by Narver and Slater (1990), CFC is the integration between different functional areas of a firm by which their communication can be more efficient, and their information can be more beneficial. In addition, Suleiman Awwad and Mohammad Agti

(2011, P. 310) referred to the CFC as *"a coordinated utilization of company resources to creating superior value for target customers through integration of all functions in the firm."*

According to Peng and George (2011), IFC originally emerges from the market orientation concept, which refers to the role of all departments to share the responsibility for marketing with marketing department through their coordinated efforts to deliver superior value to their customers (Kohli & Jaworski, 1990; Narver & Slater, 1990). From the marketing point of view, IFC represents one of the three dimensions of market orientation concept, which is required for marketing in addition to the other two behavioural components, namely customer orientation and competitor orientation (Narver & Slater, 1990; Peng and George, 2011). As found by Peng and George (2011), the IFC within market oriented organizations comprises two fundamental elements, which are central to meet customers' needs and wants on time: (1) communication and sharing of information and resources (2) integration and cooperation of various functions.

As indicated by Deshpande et al. (1993), CFC relates significantly to customer orientation as a part of company culture. According to Lafferty and Hult (2001), a market oriented organisation needs sharing market information and its resources among all its functions in order to make and execute strategic and operational decisions. This process can be enhanced through effective coordination and internal connections to share and discuss ideas depending on a strong commitment and management support. In addition, inter-functional dynamics represent one of the antecedents to a market orientation. In this regard, the interdepartmental conflict may impede the implementation of market orientation due to its negative impact on communication and inter-functional performance (Jaworski & Kohli, 1993; Pulendran et al., 2000). Therefore, market-oriented organisations should avoid conflict between their functions, in particular marketing and operations, through achieving better cross-functional integration (Piercy, 2007). Furthermore, connectedness between different functions of a firm can help them to generate and share intelligence efficiently (Pulendran et al., 2000). As reported by Jaworski & Kohli, (1993), through the interdepartmental connectedness, the interdependency between departments within the organisation can be enhanced, and their personnel can be motivated to take concerted actions when generating and using the knowledge.



As indicated by Auh and Menguc (2005), IFC can enhance the ability of an organization to achieve its common goals. This is because of the role of this coordination in increasing the effectiveness of communication and cooperation leading to close relationships, trust, and commitment between members of CFTs in the organization. Furthermore, as a result of the diverse backgrounds, functional knowledge, education, and experience of these people, organizations can achieve more innovation, thereby more responsiveness to new customers or markets (Auh and Menguc, 2005).

Despite the significant impact of market orientation culture on the interactions between departments within the organisation, the two direct value-adding functions: marketing and operations have different sub-cultures and beliefs, which may impede their coordination. Therefore, organisations need to achieve a better interface between these two groups by which a single shared culture can be shaped through the convergence between their perspectives, to become more market oriented (Piercy, 2007).

### **2.3.3 Cross-Functional Integration between Marketing and Operations**

According to De Wit and Meyer, (2010), the cross-functional integration significantly relates to the organisational system of an organisation, which refers to the way it gets its people to work together to carry out the business, in terms of organisational structure, organisational processes, and organisational culture. In terms of organisational structure, it is important to balance the horizontal differentiation of tasks and responsibilities through adopting integration mechanisms, with having an appropriate number of management layers and formal authority in order to function efficiently and effectively. In addition, organisational processes formally consist of a number of arrangements and procedures utilised for coordinating the different people and units within the firm. Some informal organisational processes exist, such as informal communication between members and solving disagreements by informal meetings. In relation to the organisational culture, in order to communicate and work together easily, there is a need to share language, experience, understanding of the world, and beliefs shaping a single culture as a strong integration mechanism (De Wit & Meyer, 2010, P. 234).

In determining what the strategy should be, as a particular strategy to achieve the purpose of an organisation, the achievement of two types of fit including the fit between the firm and its environment, and the fit between its functional areas, is critical for a successful strategy. These external consonance and internal consistency should be attained through the strategy followed at the business level. At this level, *“an organisation can only be effective if it can integrate functional level strategies into an internally consistent whole.”* such as integrated marketing and operations strategies. Furthermore, the cross-functional integration facilitates the external integration of a firm with its environment (De Wit & Meyer, 2010, P. 234).

The integration between different functions of an organisation has been described as a way to increase effectiveness and efficiency when accomplishing organisational tasks together in various ways, involving cross-functional coordination, cooperation, and communication (Gemser & Leenders, 2011). In the extensive research on CFI, different approaches have been presented to defining integration. In this regard, many authors have defined the integration as an information processing phenomenon (e.g., Gattiker, 2007; Sharma, 2013). According to Turkulainen (2008), the definitions of integration in existing research can be grouped into (i) integration as an outcome and (ii) integration as a process. First, integration as an outcome reflects the extent to which different functions of a company work jointly in a collaborative manner (O’Leary-Kelly & Flores, 2002), the level of communication, information sharing, and the degree of coordination (Bharadwaj et al., 2007; Song and Montoya-Weiss, 2001). Second, integration as a process has been explained in different approaches. Some scholars illustrated that integration process means how to develop the collaboration and coordination across functions of an organisation through sharing their resources (Jassawalla & Sashittal, 2006; Tsai & Hsu, 2014) or gaining and sharing strategic knowledge and information of the external environment of an organisation (Swink et al., 2007). Finally, some other researchers such as Song et al. (1997) have defined integration both as an outcome (the level of cross-functional interaction, communication, and sharing information), and as a process (achieving and developing effective unity of efforts and combination of resources).

According to Porter (2004), the integration between value-adding activities of an organisation is divided into external and internal integration. External integration refers to the vertical integration of a company with suppliers and customers (Swink et al., 2007), through which their information and inputs can be incorporated to internal planning (Frohlich & Westbrook, 2001). Internal integration refers to the horizontal linkages of different functions within an

organisation. There are four types of this integration: (I) Strategic Integration (II) Cross-Functional Integration (CFI) (III) Internal Supply Chain Integration, and (IV) Integration within a function (Swink et al., 2007). Strategic integration refers to the alignment of the functional objectives and actions of a department such as purchasing, with the firm's strategy (Narasimhan & Das, 2001; Turkulainen, 2008). In operations management literature, a growing body of research (e.g., Hausman et al., 2002; Paiva, 2010; Sawhney & Piper, 2002; Swink & Song, 2007; Tang, 2010), has paid great attention to cross-functional integration, which is critical for strategic integration, such as the integration between marketing and operations, as a major functions of an organisation (O'Leary-Kelly & Flores, 2002). In addition to this integration, there is an integration of sub-functions (e.g., purchasing, and manufacturing), which is known as internal supply chain integration (Pagell, 2004). Finally, integration within one function consists of for instance the integration between production units within the factory network of a company (Turkulainen, 2008).

Many studies on cross-functional integration have been carried out in different sectors. For example, research on manufacturing and marketing interface in the industry of food and machinery (Paiva, 2010), marketing and R & D integration in the pharmaceutical industry (Leenders & Wierenga, 2002); and the integration of operations, purchasing, and logistics in the industry of printing, food products, and machined metal parts (Pagell, 2004). One of the important studies on the integration between marketing and purchasing functions has been conducted by Toon, Morgan, Lindgreen, Vanhamme, and Hingley (2016) in an electrical appliances industry. In addition, they developed a theoretical framework which consists of two dimensions: the internal dynamics of firms and managerial approaches of marketing and purchasing coordination. Commonly, the internal dynamics represent contextual settings for many factors, in which the processes of value chain activities are implemented within organisations (Bocconcelli & Tunisini, 2012). As mentioned by Toon et al. (2016), the internal dynamics can be grouped into three core areas: structural, human, and situational dynamics. Furthermore, they suggested this classification as a reference point for researching the internal integration of organisations.

In this study, the focus was on the integration between marketing and operations functions because of its crucial role in developing the delivery performance of the two case study organisations (O'Leary-Kelly & Flores, 2002), which is the aim of the present project. In terms of the structural dynamics, the integration between marketing and operations areas is identified in central part by the architecture of the internal processes of the organisation, due

to the direct contribution of these two core functions to adding and creating value for customers (Piercy, 2007; Porter, 2004). These dynamics reflect the nature and type of exchange linkages between marketing and other functional areas of an organisation such as operations, which comprise formalisation, joint planning, and team work (Homburg et al., 2008). In relation to the human dynamics, this cross-functional integration requires trust in exchanging knowledge and effective communications between people, by which collaborative culture can be shaped (Blois & Ivens, 2006). Furthermore, the cross-functional integration process can be determined in advance through the configuration of contextual factors within organisations, which represents the situational dynamics of the firm. These dynamics refer to the extent to which the functions are able to integrate (Toon et al., 2016). This relies on four internal factors: physical location, goal orientation, power balance between functions, and cross-functional knowledge (Flynn et al., 2010; Griffin & Hauser, 1996; Wind, 2005).

Due to the significant contribution of the integration between marketing and operations functional areas to developing firm's performance, this topic has been addressed by many scholars (Mollenkopf et al., 2011). Since the late 1980s, various operations management specialists have suggested different integration models of marketing and operations areas which relate to strategic and/or operational level such as new product development, and demand/supply interface (Tang, 2010). Research was conducted by Hausman et al. (2002) which relied on a survey of 390 executives, and their statistical analysis provided evidence of the positive effect of a marketing and operations interface on the competitive position and profits of a firm. In a second study, Hausman and Montgomery (1997) analyzed customer preferences, and explained how they trade off among manufacturing priorities. Third, Sawhney and Piper (2002) found that firms can reduce cost and late deliveries by achieving a high level of marketing and operations integration. Fourth, Kulp et al. (2004) found that a firm's profits can be positively impacted due to the integrated information of the operations group and retailers, which contributes to satisfying customers' orders quickly.

In small or large companies, interfacing manufacturing with marketing as core functions is essential for successfully achieving the fit between organisational capabilities and market requirements by which customers can be satisfied (Gonzalez et al., 2004; Hausman, et al., 2002; Slack et al., 2009). However, in many organisations, the achievement of these linkages of the two functions is difficult. This is because of the dynamics of market and the inherent nature of manufacturing processes, as well as the interdependency between marketing and

operations departments in relation to their critical information and resources (Piercy, 2010; Tang, 2010; Eng & Ozdemir, 2014). Therefore, cross-functional collaboration and sharing information between these two areas is necessary to correctly match market demand to operational capabilities, thus enabling a higher delivery performance (Hausman et al., 2002; Hill, 2005; Piercy, 2010).

From the research on CFI, which has been conducted in different areas such as organisational behaviour, operations management, and marketing communities, three major themes have emerged as fundamental requirements for achieving the integration: (i) strategy and strategic leadership (ii) communication and cross-functional working, and (iii) reward systems (Piercy, 2010). In order to achieve the integration between marketing and operations functions, the strategy of a company should be clear for all members to be able to concentrate on the overall task and goal of the organisation rather than just functional responsibilities and objectives (Parker, 2003). Furthermore, formulating the strategy of an organisation by marketing and operations groups together ensures that the implementation of the strategy is successful, based on the combination of the organisational capabilities, via a feasible and realistic strategy (Hausman et al., 2002). In addition, the leaders play an important role in encouraging members of the organisation to work jointly, and managing their interactions and cultures towards achieving the goals of the company through a clear strategic vision (Martin et al., 2009). Calantone et al. (2002) highlighted the importance of exchanging knowledge between different functions of a company to develop the understanding of each function about the departmental objectives and priorities of the other to become more collaborative. Another key to collaboration is communication, by which the relationship between marketing and operational areas can be closed through formal exchanges and informal practices, such as workshops and group meetings (Crittenden et al., 1993). Furthermore, functional boundaries can be removed when an organisation brings its employees to work together within a team, such as NPD team (De Burca et al., 2004). In addition, the cooperation between various functions can be stimulated when organisations use effective reward systems by which the performance of all members can be evaluated sufficiently. In this respect, due to the highly interdependent tasks of manufacturing and marketing groups, the reward systems and evaluation of these people should be based on the process rather than the performance of individuals, thus encouraging to an effective collaboration (Ellinger, 2000).

Many authors (e.g., Hausman et al., 2002; Kamboj et al., 2015; Nath et al., 2010; Yu et al., 2014) have argued that the integration of marketing and operations areas can be achieved through the adoption of the resource based view (RBV) by the organisations. As reported by Yu et al. (2014), through adopting RBV strategy, the competitive capabilities of the organisation can be unique due to the combination of marketing and operations capabilities, which contribute to attaining competitive advantages. In this respect, depending on marketing capabilities of organisations, these companies can build sustainable close relationships with customers, which contribute to developing operations capabilities in relation to NPD, resource planning, and delivery (Hausman et al., 2002; Yu et al., 2014).

According to Sharma (2013), a huge amount of information can be generated when marketing and operations groups work together. Therefore, there is a need for using a multi cross-functional system such as enterprise resource planning (ERP), by which the coordination between marketing and operations functions can be improved in order to deal with this information effectively. This use can lead to reduced uncertainty because of the interdependence of the two groups. As a result, this integrated system can be adopted as an appropriate mechanism for managing marketing and operations interface effectively (Sharma, 2013).

Concurrent engineering (CE) is another mechanism to manage the collaboration among different functions of a firm, particularly between marketing and operations functional areas, in order to develop and produce new innovative products rapidly. This strategy can achieve the integration between the two functions through performing their tasks in parallel to reduce time consumption in operations when using CFTs, which are an essential strategy for attaining this purpose (Girard et al., 2007). Many studies have pointed out that CFTs represent a common method to achieve the integration between marketing and operations functions, due to the ability of this strategy to manage the interactions among the two groups efficiently through their collaborative activities, and sharing information to respond to market requirements rapidly before competitors (Brettel et al., 2011; Parker, 2003; Shen, 2002; Tsai & Hsu, 2014).

### 2.3.4 Using CFTs for managing Marketing and Operations Interactions

In today's manufacturing environment, many successful organisations commonly adopt cross-functional teams (CFTs) to be more responsive to the dynamic market (Parker, 2003; Lopes Pimenta et al., 2014; Shen, 2002). This is because of the significant contribution of CFTs as an integrating mechanism to developing cross-functional relations among employees of these organisations (Topolsek & Curin, 2012). In addition, using CFTs enables organisations to build and exploit capability more efficiently and effectively through creating and sharing knowledge between members. This represents an imperative to create capability configurations within an organisation (De Wit & Meyer, 2010, P. 234). As illustrated by Webber, (2002), CFTs are defined as groups that involve members from different departments of a firm who work together to achieve a specific goal. In addition, Shen (2002: p.4) described CFT as: *"a group of individuals brought together from more than one functional area of a business to work on a problem or process, which requires the knowledge, training and capabilities across the areas to successfully complete the work."* Furthermore, adopting CFTs requires effective leadership, diverse expertise, and a collaborative organisational culture, by which cross-functional capability can be built in an organisation (Pagell, 2004; Shen, 2002).

As demonstrated by Lopes Pimenta et al. (2014), CFTs can be an effective strategy for organisations due to the ability of these teams to: (i) reduce the centralization of organisation's hierarchy; accelerating processes and developing the responsiveness to market demand (ii) make higher quality decisions compared with individual decisions (Henke et al., 1993) (iii) improve effective communication through the informal practices such as informal workshops and networks (iv) generate an organisational collaborative culture which concentrates on the broad goals of the company (Maltz & Kohli, 2000) (v) overcome the functional boundaries issues, such as conflicts and language barriers (Griffin & Hauser, 1996).

Due to the increased challenges of business in today's organisations, these companies should recognise the significant impact on their effectiveness of the processes of CFTs such as coordination, collaboration, and communication. Furthermore, the advantages of CFTs rely on the extent to which they benefit from their full potential through collaborative activities and the support of their environment (Webber, 2002). According to Mohsen & Eng (2013: p.15), using CFTs has been become critical for implementing many strategic processes, such

as NPD and TQM, that require coordination among different departments, in particular manufacturing and marketing. In addition, this use gives opportunities for people from these functions to develop their knowledge and performance through exchanging a wide range of information and experiences. As she stated, "*CFTs have become a standard integration mechanism for many organisations as they are considered an effective method for dealing with increasing environment complexity*". Therefore, Chen (2007) and Bunduchi (2009) pointed out that CFTs have increasingly become a superior method for the strategic choice by which organisations can develop and launch new products successfully through sharing the resources and information of marketing and operations as direct value-adding functions.

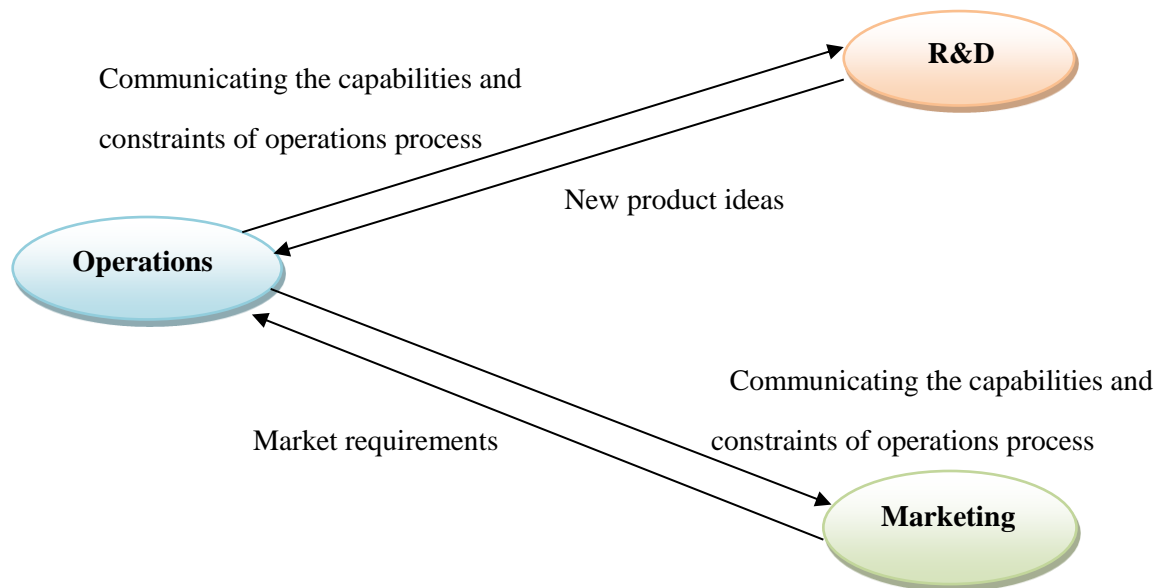
In addition, members of marketing, operations, and R&D as core functions of manufacturing organisations significantly contribute to producing and delivering new products to the target customers. This can be achieved through the participation and coordination between these people, as shown in Figure 2.4 (Slack et al., 2013). Furthermore, the collaboration among these people relates to three dimensions: (1) Technological potential of products (R&D); (2) Interpretation of customer preferences (marketing); (3) Required manufacturing capabilities (operations) (Brettel et al., 2011). In order to perform these interdependent tasks successfully, there is a great need for effective collaborative interactions among these groups within CFTs (Bendoly et al., 2012; Song & Swink, 2002; Troy et al., 2008). In addition, Tsai and Hsu (2014) indicated that collaboration between people from different departments, particularly marketing and operations within CFTs, could be beneficial for organisations. This is because of the significant contribution of this collaboration to the integration of various points of view for innovation. Moreover, the results of sharing and analysing market information by CFTs people jointly can be used as a guide by these teams to improve the design of products and processes to be more innovative (Tsai & Hsu, 2014). Furthermore, members of CFTs have varied beliefs, experiences, and background (Zhang & Zhang, 2013); and they work together to facilitate NPD processes as a result of the variety in their disciplines and expertise that contributes to producing innovative products (Horwitz, 2005).

As stated by Swink and Song, (2007), utilizing NPD teams contributes to achieving convergence between marketing and operations functions due to the effective collaboration and coordination among members. For example, superior capabilities could be gained when adopting these teams as a result of their diverse experience to deal with complex tasks efficiently (Bruns, 2013). Furthermore, through the collaborative interactions of CFTs, firms can answer such questions as: "What are the market requirements? How can we translate



these requirements into product and process design? How can we produce and deliver these products? (Slack et al. 2013)

**Figure 2.4 The relationship between the operations function and other core functions of the organisation**

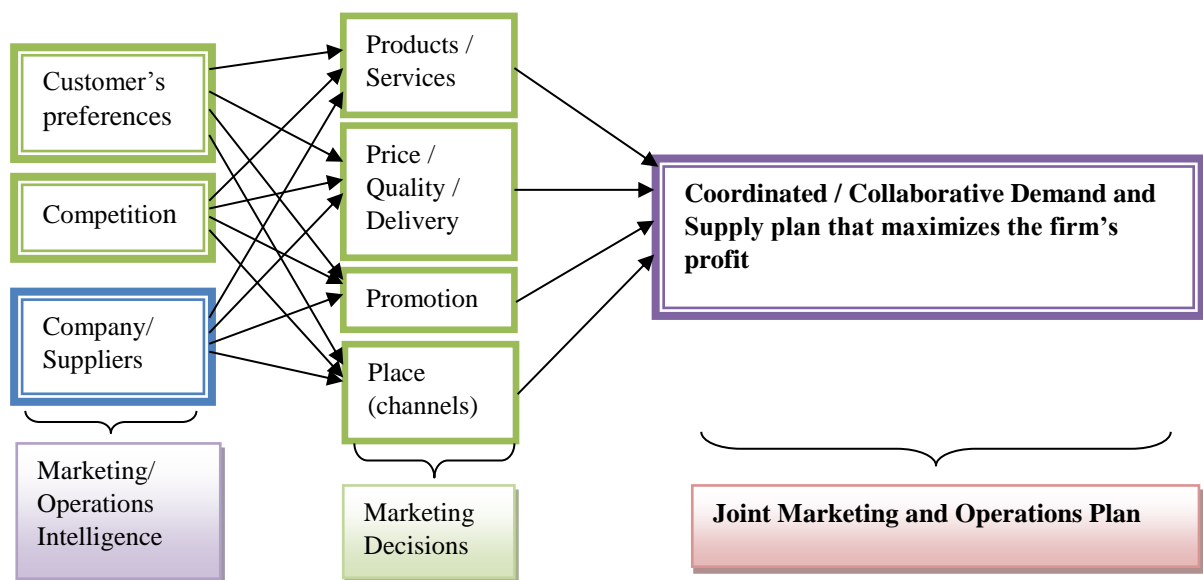


Source: Adapted from Slack et al. (2013, p: 8)

According to Horwitz (2005), the varied knowledge and expertise of CFTs contributes to improving their performance when exchanging different perspectives. One of the most important aspects of the collaboration between members is exchanging their backgrounds, knowledge, and expertise. This participation should be managed effectively in order to benefit from the full value of the diversity. Many global companies such as *Motorola* and *Ford* have been able to develop their resources more effectively and to respond more quickly to market demand due to the effective use of CFTs. As stated by Shen (2002), by utilising CFTs, these organisations achieved the diversity of resources and expertise, advanced technology, decentralized the business. As reported by Tang (2010), through adopting CFTs, marketing and operations members can work together to make and develop integrated plans and decisions through sharing their information and experience regarding market demand and

production capabilities, as set out in Figure 2.5. Moreover, conflict between the two groups could be reduced or avoided by the coordinated plans and decisions. Furthermore, this coordination for improving marketing and operations plans and decisions enhances the ability of a firm to predict and respond accurately and quickly to market requirements.

**Figure 2.5 Coordinated and collaborative marketing and operations planning process**



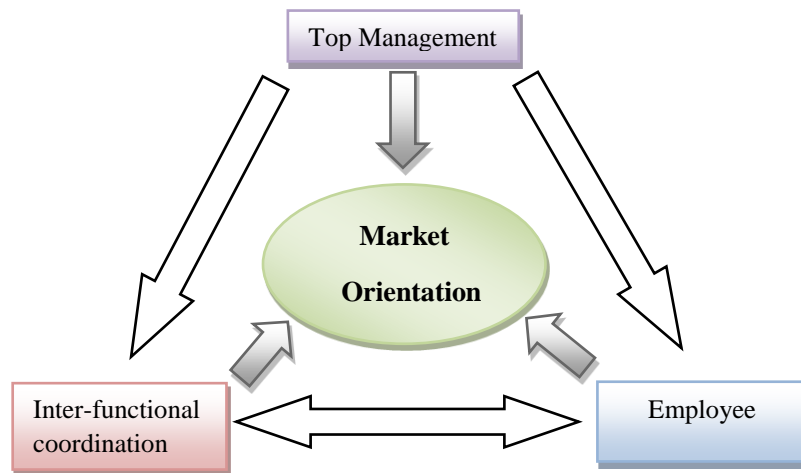
Source: Tang (2010, P: 125)

As Jassawalla and Sashittal (2006) mentioned, CFTs represent a favoured structural mechanism by which companies are able to attain a high degree of integration among members for innovation of processes. They added that organisations under their study had made many modifications in their product innovation processes to reduce their cost and time when they developed communication and coordination between CFTs people. Furthermore, these firms adopted effective training and reward programmes for members to be encouraged to cooperate.

## 2.4 The Impediments to Cross-Functional Integration

This theoretical subsection focuses on the barriers to cross-functional integration (CFI), in particular problems that are likely to occur when people from different functional areas of a firm work jointly within CFTs, which impede the development of market orientation. In the market orientation literature, many studies, such as Martin & Grbac, (2003), and Narver & Slater (1990), have emphasised the importance of this strategic orientation to managing the resources of organisations more efficiently and effectively in order to create and deliver superior value to customers. However, implementing market orientation is difficult to achieve because of several barriers and impediments which relate to external environment, operational environment, and internal environment (Dubihlela & Dhurup, 2015). In relation to the external environment, as a result of its three elements: the state, the economy, and technological progress, the application of market orientation can be impeded (Kotler & Armstrong, 2012). As mentioned by Dubihlela and Dhurup (2015, P. 1669), in the medium and long run, the industry profitability can be prompted by the industry structure, which reflects the competitive forces, thereby it can be argued that *“the level of competitiveness of the industry can deter operations and hence be a barrier to market orientation.”* In the turbulent market, where customers’ preferences and competitors’ actions are unstable or unpredictable, organisations should adopt competitive strategies (e.g., market orientation) to cope with the problems of this instability, as they may need to make modifications in their products continuously in order to satisfy customers’ changing needs (Dubihlela & Dhurup, 2015). As reported by Tomaskova (2009), the application of market orientation can be impeded by three elements, namely top management, employees, and inter-functional coordination (IFC), as shown in Figure 2.6. The major obstacle to developing market orientation is weakness in top management, which relates to the perception of market orientation by top management (Aggarwal, 2003; Kohil & Jaworski, 1990), knowledge, skills and commitment of top management (Harris & Ogbonna, 2001). These barriers significantly impact the management style and mission, goal, and strategy (Fonfara, 2001). In addition, employees can be an obstacle to the market-oriented organisations because of four elements: (1) personality (2) knowledge, skills and experiences (3) reward system (satisfaction) (Pulendran et al., 2000) (4) interdepartmental conflict (Aggarwal, 2003).

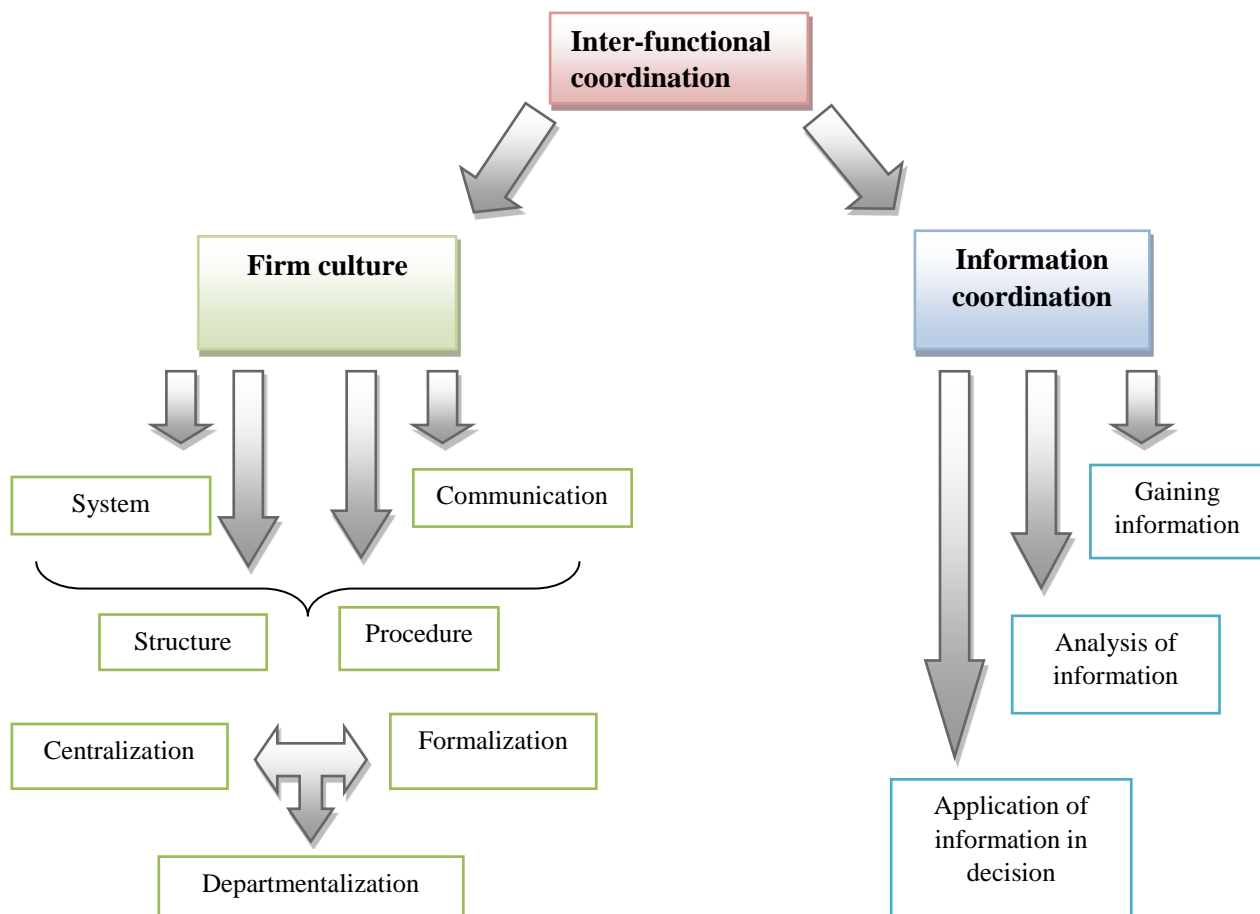
**Figure 2.6 Elements of market orientation internal barriers**



Source: Tomaskova (2009, p: 536)

IFC represents one of the most important barriers areas of market orientation development, which has been researched and identified by many scholars (e.g., Harris, 1996; Slater and Narver, 1995). According to Tomaskova (2009), these barriers can be divided into two groups, namely firm culture and information coordination. The coordination between different departments of an organisation can be impeded due to the barriers of the firm culture in terms of system, structure, procedure, and communication as set out in Figure 2.7. Furthermore, information is critical for producing goods that consumers want, and communication is an essential element for sharing experiences of employees with each other and also for building good relationships between them. Moreover, if there are weaknesses in the system, structure, procedure and communication of an organisation, it will face impediments because of centralization, formalization and departmentalization (Tomaskova, 2009).

**Figure 2.7 Inter-functional coordination connected barriers**



Source: Tomaskova ( 2009, P: 538)

One of these obstacles is the negative effect of centralization and formalization on innovation and a firm's decisions in terms of speed and flexibility (Pulendran et al., 2000). Moreover, an organisation is not able to improve its production capabilities through departmentalization and it may lose its staffing expertise. Further to this, another barrier that relates to inter-functional coordination is information coordination, which is an important factor for obtaining and analysing this information in order to make plans and decisions (Tang, 2010; Tomaskova, 2009).

As mentioned by Harris (2000), the development of market orientation can be impeded due to the potential actions and beliefs of the employees of an organisation, which may lead to organisational difficulties. These impediments as organisational barriers significantly relate to structure, strategy and system. According to Lichtenthal & Wilson (1992), there are two main dimensions. First, the ability of an organisation to develop a high level of market orientation can be impeded if this firm lacks appropriate integrated relationships between marketing and other functions to act in accordance with this orientation. Secondly, the efficiency and speed of market oriented change could be influenced by the organisational structure. In this respect, Jaworski & Kohli (1993) found that characteristics of organisational structure such as limited connectedness and high centralization negatively impact the implementation of market orientation. In addition, according to Harris (2000), many studies have investigated strategic obstacles to the development of market orientation, in terms of strategic type (Narver and Slater, 1993), strategic dimensions (Morgan and Strong, 1998), and the process of strategy formulation (Pulendran and Speed, 1996). Furthermore, inadequate budgeting systems, inter-functional coordination systems, and lack of training procedures represent potential systems barriers when executing market orientation (Morgan and Piercy, 1992).

As demonstrated by Calantone et al. (2002), there are several impediments to CFI as a fundamental principle of market orientation, such as personality, language, knowledge, and different goals and responsibilities. Despite the importance of CFI in developing innovative products, two problems can be associated with the process of functional collaboration (Tsai & Hsu, 2014). First, this process may require a long time for holding numerous meetings to facilitate information exchange and make decisions (Song & Xie, 2000). The second problem is the conflict among people from different functions due to their various beliefs and functional objectives (Parry & Song, 1993).

#### **2.4.1 The Potential Problems of Utilising CFTs**

Theoretically, as reported by Parker (2003), CFTs are a great idea which is easy to adopt when a group of people from different functions of firm who have varied expertise work together to achieve a specific goal. However, in practice, utilising CFTs effectively is difficult due to the functional barriers that are impediments to these teams. Therefore, many companies do not use CFTs as effectively and efficiently as they could and should do (Henke et al., 1993). Typically, organisations devote considerable amounts of money and effort to

improving the design of CFTs structure, while there is a gap in selecting and preparing team's members to perform their tasks efficiently, thus leading to ineffective teamwork (Henke et al., 1993). This gap can be closed through training group members in order to enhance their ability to work not only together, but also with people from outside the CFTs (Parker, 1994). In addition, the consistency between CFTs tasks and reward design has a significant impact on a team's performance. The different systems for rewards can lead to reduced effectiveness of the integration between members (Holland et al., 2000). Pascarella (1997) stated that an organisation should depend on the behaviour of its members for reward. Furthermore, the results of teamwork are not a fair basis to reward individuals.

As many scholars have argued, the effective use of CFTs is crucial to a firm's success in developing new products. However, attaining this requirement could be difficult because of the functional barriers which cause particular impediments (Griffin, 1997). According to a survey of 500 US organisations, Holland, Gaston, and Gomes (2000) found that there are six main obstacles to the performance of CFTs:

- ❖ Inconsistent organisational goals
- ❖ Competing for resources
- ❖ The overlap of responsibilities
- ❖ Conflicting individual objectives
- ❖ Unclear direction and preferences
- ❖ Insufficient collaboration

One of the important obstacles to CFTs is the complexity and difficulty of leadership because of the complex tasks and the variety of these teams. Therefore, the leader of CFTs should understand the tasks and recognise the contributions of members, and how to facilitate their interactions through developing his/her skills in managing people (Parker, 2003). As pointed out by Holland et al. (2000), the leader should be chosen because of his ability to manage the inter-functional relationship within a collaborative environment of CFTs. As illustrated by Hoegl (2005), CFTs size represents an essential structural element, which significantly influences the processes of these teams (e.g., cooperation and communication), and subsequently, the effectiveness of CFTs. Despite the effective communication of the smaller teams, many organisations today utilise too large teams. The reason behind these inflated

CFTs is the considerable departmental interests to be represented in the projects of these teams. However, as Lalsing et al. (2012) reported, with the larger CFTs, sharing information between members becomes more difficult due to the increased complexity of the communication structure of these teams as well as the huge number of communication channels.

As Parker (2003) concluded from his work with CFTs, goal ambiguity represents a significant problem for teams when members have no clear vision of where they want to be or what they want to accomplish. Therefore, people are clear about what pieces of work should be delivered, but they have little sense regarding where these pieces may fit into the overall task. As a result, they will only be concerned with delivering their work on time (Parker, 2003).

Despite the advantages of the diverse experience and knowledge of CFTs members, potential problems will probably occur due to the different opinions and perceptions which may be associated with this variety. In this regard, many researchers (e.g., Horwitz, 2005; Lovelace et al., 2001; Majchrzak et al., 2012) have argued that the diverse expertise of CFTs people can cause disagreements between them and negatively affect their response and performance. In addition, sharing information between members of CFTs may be negatively impacted due to the functional diversity (Bunderson and Sutcliffe, 2002). In order to benefit from the full potential of CFTs when exchanging diverse expertise, members should interact collaboratively with each other in a supportive environment (Daspit et al., 2013).

#### **2.4.1.1 Conflict**

CFTs are not always effective because of the conflict and misunderstandings that may occur among their members, thus they can be dissatisfied or distracted. Indeed, this can negatively impact the collaboration, cohesiveness, and consensus of these teams (Lalsing et al., 2012). Furthermore, some studies (e.g., Calantone et al., 2002; Chen, 2007) illustrated that CFTs do not always work well, because of the potential problems which are associated with the implementation of CFTs, such as conflict (Chen, 2007; Kotlarsky et al., 2015).



In addition, conflict may happen between the members of CFTs when they compete with each other for resources due to their various personalities and functional loyalties. Furthermore, disagreements among individuals are often due to striving to achieve their functional goal more than the overall goal of their company (Holland et al., 2000). In addition, the diverse knowledge and specialized experiences of CFTs people can also cause conflict between them. This conflict can negatively influence the collaboration and communication among these members (Daspit et al., 2013). As Parker mentioned, conflict may happen between members of CFTs due to their different opinions and views, although these teams can attain better results because of their diverse experience. However, if people making up CFTs differ in their priorities, styles and some past negative experiences, conflict will be increased and lead to poorer performance (Parker, 2003).

As stated by Horwitz, (2005), the varied knowledge and expertise of CFTs members contribute to improving their performance when exchanging different perspectives. However, this variety in specialized expertise, knowledge, and views of members can lead to obstacles to communication, and then cause disagreements between these people (Majchrzak et al., 2012). As Parker stated, CFTs can be ineffective if they do not feel able to deal with their problems through their diverse experiences and knowledge. This is the main impediment to CFTs that should be resolved by training (Parker, 2003). In addition, conflict makes team's members dissatisfied as well as more likely to disengage from the team working process (Holland et al., 2000). Due to the differences in the perceptions and beliefs of CFTs people, in particular marketing and operations members, conflict happens between the two groups, which negatively impacts the effectiveness of CFTs. For example, operations personnel prefer not to make rapid and frequent changes in product design to avoid the increase in production cost. On the other hand, marketing people seek to satisfy customers through the diversity of products, which requires short runs and modifications in the production line. This causes disagreements between marketing and operations personnel (Calantone et al., 2002).

In order to benefit from the full value of the diverse expertise and knowledge of CFTs members without conflict, these people should be able to work together collaboratively in a supportive environment (Daspit et al., 2013). Therefore, CFTs should avoid disagreements by the integration of their knowledge, experience and views in interesting tasks. Organisations can resolve this conflict through different strategies, such as organizational restructuring and

effective communication (Crittenden et al., 1993). Moreover, firms can deal with conflict by training members of CFTs to develop their skills, and also by using the experts which are useful for facilitating team process (Parker, 2003). In addition, the ability of CFTs to resolve their disagreements and manage their progress towards achieving common goals can be enhanced when management give them the authority and autonomy to be empowered (McDonough, 2000).

#### **2.4.1.2 Lack of Empowerment**

CFTs empowerment, which is emphasized by many scholars (e.g., Henke et al., 1993; Holland et al., 2000; Parker, 2003; Yang & Ok Choi, 2009) as “autonomy” or “power”, is critical to develop the effectiveness of these teams to become successful. Today, empowerment represents an important requirement for achieving CFTs success because *"all the research on numerous global teams indicates that decentralization of authority is a key to improving decision-making processes"* (Parker, 2003, p. 67). Indeed, CFTs can be empowered if they have both the responsibility and the authority to implement their mission and perform their tasks without checking with anyone from outside teams (Parker, 2003). However, empowerment of CFTs can be influenced negatively when functional managers attempt to meddle in the tasks of teams or their decisions. This could be the greatest impediment (Trent and Monczka, 1994) which has a negative impact on the effectiveness of CFTs (Holland et al., 2000). As Parker mentioned, lack of empowerment or confusion regarding the authority of CFTs can lead to problems and limit success. For a new product development team, empowerment means the freedom and flexibility to respond rapidly to customer expectations (Parker, 1994; 2003).

Henke et al. (1993) pointed out that decision-making processes can be problematic because of the hierarchical information overloads at higher levels of management. The reason for this is the limited authority of CFTs to make decisions. In addition, granting a limited authority to CFTs is inconsistent with sharing resources of departments between members to implement any agreed-upon decisions, thus the authority delegated to CFTs by management should be significant. Furthermore, the authority of these teams should be associated with the responsibility to make and action decisions (Henke et al., 1993). Yang & Ok Choi (2009)

showed that the autonomy of CFTs, as an essential dimension of empowerment, relates significantly to their performance, because it motivates members to perform their tasks and make decisions effectively. Therefore, if there is a lack of autonomy, this can negatively influence the effectiveness of CFTs and their performance. Furthermore, these teams can be less proactive and decisive when members believe their teams have lower responsibility to perform insignificant tasks and activities for their organisation. In addition, some scholars (e.g., Lawler, 1986; Moon and Swaffin-Smith, 1998) stressed the importance of information and knowledge to make decisions by members of CFTs. As a result of this, the lack of this information and knowledge can negatively affect the performance of CFTs and the quality of their decisions (Yang & Ok Choi, 2009).

As a result of the increasingly competitive pressure of markets, there is a need to grant more authority to CFTs to become innovative in order to adapt to the dynamic environment (Chen, 2007; Chen et al., 2015). This is because they are closer to the action, and have more specific experience and knowledge to solve problems (Tata & Prasad, 2004). However, due to the centralization of the traditional organizational structure of an organisation, coordination and resolving problems happen at high managerial levels. Therefore, CFTs members cannot recognise and correct these problems because of their limited authority and the unclear overall process (Chen, 2007). In addition, innovation of CFTs people when they perform their tasks can be negatively influenced due to formalization, in which the work is guided by a number of rules and procedures according to job specifications (Bidault & Cummings, 1994). This is likely to impede the flexibility of CFTs to engage in alternative behaviour necessary for innovation. Consequently, the authority of CFTs does not fully enable them to benefit from their diverse expertise and knowledge in order to perform varied tasks more effectively (Naughton & Outcalt, 1988). Indeed, as suggested by Chen (2007, P. 690), *"when the organisational structure is more decentralized and less formalized, cross-functional teams interaction is more favourable during the (NPD) period."* Therefore, in order to empower CFTs to become more active and flexible when they deal with the dynamic market demand, organisations should support these teams through giving them the authority and freedom to make decisions and also the autonomy to implement their task effectively without any impact from outside CFTs. Thus there should not be excessive managerial control (Chen et al., 2015).

### **2.4.1.3 Lack of Communication**

According to Nguyen and Rukavishnikova, lack of communication is one of the significant obstacles to CFTs, which has a negative impact on NPD processes. This problem strongly relates to several elements, namely team size, super-ordinate goals, centralization of communication, physical proximity, and leadership (Nguyen and Rukavishnikova, 2013). In terms of team size, communication effectiveness and information efficiency which is shared by team's members could be impeded due to the complex structure of CFTs communication (Nguyen & Rukavishnikova, 2013). Moreover, it could be difficult to coordinate team members within a large team (Hoegl, 2005) which has a number of communication channels (Lalsing et al., 2012). Furthermore, CFTs should manage their communication with other parts of the firm effectively to gain information by responding to frequent communications across the organisation (Holland et al., 2000).

As mentioned by Nguyen and Rukavishnikova, (2013), centralization could be an impediment to CFTs communication because information is not distributed equally among all members. Furthermore, the level of innovation can be reduced when information is insufficiently and inefficiently distributed and collected within CFTs because of centralisation of communication. In addition, communication among CFTs members may be decreased due to centralization, which negatively influences their ability to share their different resources and information (Moenaert et al., 1994).

In addition, communication could be more frequent as a result of physical proximity, which diminishes the centralization of a network (Kratzer, 2001), and improves mutual understanding and shared experiences (Leenders et al., 2003). However, it is not easy for the members of teams to come together in the same place. This could be problematic, especially with the large international organisations (Nguyen and Rukavishnikova, 2013). Furthermore, it has been suggested that companies can arrange to create temporary configurations during formal and informal events as an alternative to long term physical proximity (Leenders et al., 2003).

Due to the different languages, background, and experiences of a team's members, misunderstanding often happens with CFTs when communicating information and ideas between them. This problem of communication can lead to disagreements among members that negatively influence the effectiveness of CFTs. In addition, leadership of teams has a significant impact on team communication, which can be supported by effective leadership

which guides communication in a consistent and collaborative manner. Therefore, leadership can contribute to solving problems of communication (Lovelace et al., 2001).

As mentioned by Horwitz, (2005), the varied knowledge and expertise of CFTs members helps to improve their performance when exchanging different perspectives. However, this variety in specialized expertise, knowledge, and views of members can lead to obstacles to communication between CFTs people (Majchrzak et al., 2012). Kotlarsky et al. (2015) also reported that the reason for these communication problems is their different perspectives and practices. In addition, it is argued that the insufficient communication relates significantly to the disagreements between marketing and operations members, particularly concerning customer needs when developing a new product (Kim et al., 2006). Kotlarsky et al., (2015) have suggested an integrated memory system as an integrated mechanism for processing information that can be used by CFTs in order to avoid knowledge barriers between members, thereby enabling them to benefit from the full value of their diverse knowledge for better coordination.

Hameri and Nihtila (1997) highlighted the importance of using the networked applications of the information technology through internet by CFTs members to develop new products successfully and quickly. The reason for this is the significant role of such tools in enhancing CFTs communications and disseminating information. For example, communications within CFTs can be more effective when adopting computer-based message systems or electronic mail systems, instead of meetings, written mail, and telephone calls (Chen, 2007). However, as mentioned by Chen, *“despite the availability of the hardware and software, many users may not be familiar with them, or may even not know how to use them in their work.”* (Chen, 2007, P. 689), thus reducing benefits from information technology, despite the high investments in this orientation (Bharadwaj, 2000). Consequently, information technology training is necessary for understanding how to utilise information technology infrastructure by CFTs people in order to develop their skills in operating and managing the information technology resources for better communication and coordination (Bharadwaj, 2000; Chen, 2007).

## **2.5 Product Delivery Priority: An Essential Objective of Operations**

In order to survive and grow in the marketplace, manufacturing organisations must compete successfully through translating customer requirements into objectives for operations. These objectives, known as competitive priorities, include cost, quality, flexibility and delivery (Ahmad & Schroeder, 2011; Slack et al., 2009). These priorities as competitive dimensions represent a strategic choice for developing certain operations capabilities by which market demand can be met. Furthermore, organizations choose among these priorities according to their competitive position (Boyer & Lewis, 2002). In today's fierce competition environment, manufacturing organizations have been become forced to move from mass production to mass customization and time-based competition in order to respond to customers' individual demand quickly. Therefore, these firms focus on flexibility and delivery, which relate strongly to the variety of customer needs and customer sensitiveness to time which means a customer has become unwilling to wait to buy what he/she needs (Lin et al., 2012; Sapkauskiene & Leitoniene, 2015).

In the emerging market context, due to the complexity of the customer demand conditions and the intensity of the competition, speed to market is crucial to achieve an organization's market success (McNally et al., 2011; Zhang et al., 2015). Therefore, organizations have become time oriented, striving to respond to changing customer needs and technologies quickly through adopting strategic practices for reducing cycle time (Sapkauskiene & Leitoniene, 2015). As a result, time-based competition has received more attention, to achieve delivery priority as an ultimate resource of competitive advantage by reducing delivery and response time as well as by improving delivery reliability (Lin et al., 2012). According to Awwad et al. (2013), delivery priority means the ability of an organization to satisfy customer expectations through delivering the right product (meeting quality requirements) in the right quantity, at the right time, in the right place. This priority consists of three dimensions, namely fast delivery, delivery on time, and shortening NPD time (Lin et al., 2012). CFTs represent one of the most important time-based strategies for developing the delivery performance of organizations (Droge et al., 2004; Gemser & Leenders, 2011).

### 2.5.1 Competitive Priorities

In today's industrial environment, organisations need to concentrate on how to achieve the fit between customer requirements and operations capabilities in order to achieve competitive priorities. For this purpose, the capabilities of operations resources should be developed to be able to produce valuable things for customers, yet which are difficult to imitate by competitors. Therefore, the objectives of operations performance as known competitive priorities, including cost, flexibility, quality, delivery and dependability, should reflect customer requirements (Ahmad & Schroeder, 2011; Slack et al., 2009). Competitive priorities have been related significantly to operations capabilities as a guide for decisions concerning production, capacity, technology and process (Peng et al., 2011). Furthermore, manufacturing organisations should develop certain production capabilities according to their appropriate competitive priority to be able to compete in the marketplace (Boyer and Lewis, 2002). As observed by Slack et al. (2009: p. 41), *"the relative importance of the five performance objectives depends on how the business competes in its market."* In addition, Krajewski and Ritzman (1993: p. 47) defined competitive priorities as *"the dimensions that a firm's production system must possess to support the demands of the markets that the firm wishes to compete in."* They pointed out that these priorities represent a strategic choice for companies to adopt production systems by which the requirements of target markets can be satisfied. These priorities as competitive dimensions involve eight specific elements, as shown in Table 2.5.

**Table 2.5 Competitive priorities and elements**

<b>Cost</b>	<b>Quality</b>	<b>Time</b>	<b>Flexibility</b>
<b>Low cost</b>	Design Conformance	Delivery speed Delivery reliability New product introduction	Customization Volume flexibility

Source: Krajewski & Ritzman, (1993, P: 47)

Despite the various expressions of the competitive priorities, such as competitive dimensions (Krajewski & Ritzman, 1993), operations capabilities (Ward et al., 1998) and operations performance objectives (Slack et al., 2009; 2013), generally, there is a broad agreement among researchers that competitive priorities can be identified in four key elements: low cost, quality, delivery performance and flexibility (Ahmad & Schroeder, 2011). Furthermore, innovativeness has been added as a fifth competitive priority (Ahmad & Schroeder, 2011). As indicated by Santos (2000), the aim of competitive priorities is to employ the competitive capabilities of manufacturing toward meeting a range of key market demands, as set out in Table 2.6.

**Table 2.6 Market demands associated with competitive priorities**

<b>Competitive priority</b>	<b>Key market demands</b>
<b>Cost</b>	To offer products and/or services with a lower price
<b>Quality</b>	To offer high performance To differentiate products from competitors To deliver appropriate technical assistance To build and improve products and company image To improve products' reliability and durability
<b>Delivery performance</b>	To manufacture products with agility To ensure reliability of delivery deadline To provide technical assistance services with replacement parts
<b>Flexibility</b>	To change product design or to launch new products quickly To offer a broad product mix To change the production volume quickly

Source: Santos, (2000, p: 612)

Krajewski and Ritzman (1993) have pointed out that an operations strategy which is driven by the customer reflects a clear understanding of the long term goals of a firm and the collaboration between marketing and operations functions in order to define and translate market needs into production capabilities as competitive priorities. In addition, the competitive position of a company can be determined according to the following competitive priorities (Chase et al., 2004):



- 1- Cost
- 2- Product quality
- 3- Speed of delivery
- 4- Reliability of delivery
- 5- Volume flexibility
- 6- New product flexibility

Additionally, companies can deliver superior value to their customers through the competitive priorities as competitive capabilities in order to improve and sustain competitive advantages (Slater and Narver, 1994). These organizations can respond to segments of the market in accordance with the competitive priorities, which represent criteria for manufacturing improvement, efficiency, quality, flexibility and innovation (Bolwijn & Kumpe, 1990). In order to achieve competitive priorities as competitive advantages (Ahmad & Schroeder, 2011), there are Porter's (1980) three generic strategies which can be adopted by manufacturing organisations, namely cost leadership, differentiation, and focus. Each of these three generic strategies fundamentally varies from the others in terms of the route to competitive advantages and the scope of the strategic target in which a firm seeks to achieve them. In a cost leadership strategy, an organisation seeks to be the low-cost producer in its industry. The adoption of this strategy requires a broad scope, due to the importance of firm's breadth to its cost advantage, for which all resources of this advantage such as economies of scale must be found and exploited. In the differentiation strategy, the aim of an organisation is to be unique in its industry though producing highly valued quality products, for which it is rewarded with a premium price. This strategy also requires a broad target to attain differentiation advantages (De Wit & Meyer, 2010), such as time-based competitive advantage (Ahmad & Schroeder, 2011). In the focus strategy, the competitive scope is narrow. Therefore, it is quite different from the others. The aim of the focuser is to achieve a competitive advantage in its niche target segments. Furthermore, there are two dimensions of this strategy, the focus on cost or the focus on differentiation (De Wit & Meyer, 2010).

As demonstrated by Dilworth (1993: p.60), cited in Burgess et al. (1998, p. 305), "*a company usually cannot be all things to all customers .... Some trade-offs usually have to be made*". In other words, companies are not able to be successful in achieving all their competitive priorities at the same time, because each priority needs various operational structures. In many cases, there has been a trade-off between cost and product flexibility or delivery speed.

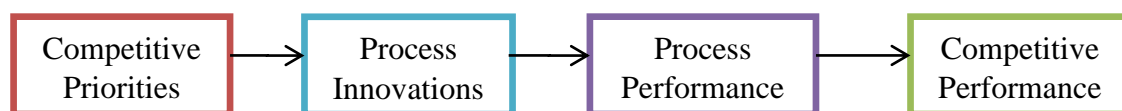
Furthermore, Boyer and Lewis (2002) illustrated that to achieve cost priority, companies often use an efficient line flow system that involves fixed machinery and operational standards in order to reduce waste and increase productivity.

Slack et al. (1998) stated that competitive priorities impact externally on customers and internally on operations as follows:

- I) With the high quality of operations, there is no wasted time, thus costs can be reduced.
- II) Faster operations can lead to reducing the levels of inventory under operating and managerial costs.
- III) Delivery reliability can contribute to achieving efficient delivery, if delivery times are identical to schedules. This can result in reducing wasted time and cost.
- IV) Flexible operations respond to changing positions and change tasks rapidly so that costs can be decreased.

By choosing between the competitive priorities according to the competitive position, managers concentrate on the areas of process performance which lead to successful competitive performance through innovation. As a result, this requires adopting process innovations such as concurrent engineering (CE) and total quality management (TQM) (Burgess et al., 1998) (See Figure 2.8).

**Figure 2.8 Competitive priorities and competitive performance**



Source: Adopted from Burgess et al. (1998, p: 306)

Achieving competitive priorities significantly depends on several factors that relate to the performance. For instance, a company may choose delivery time as its competitive priority, but whether or not superior delivery performance is attained relies on factors such as distribution of relevant resources and implementation of suitable management applications (e.g., Just-In-Time (JIT)). Therefore, determining the dimensions of competitive priorities is essential to understand what a company's strategic preferences are (Ahmad & Schroeder, 2011).

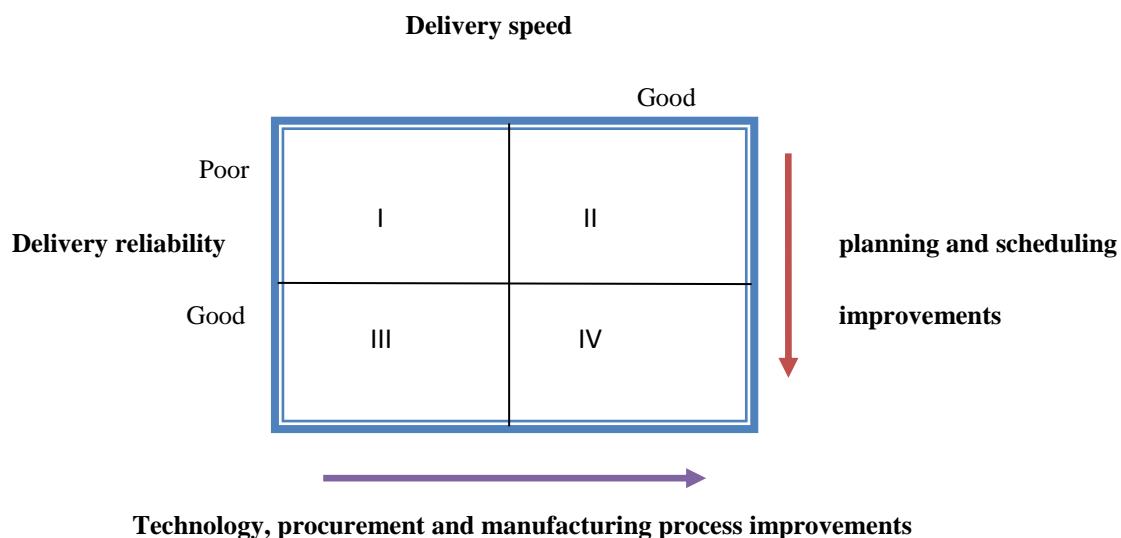
### **2.5.2 Product Delivery Priority**

As mentioned by Milling, Schwellbach, and Thun (2000), quality still has to be seen as an essential for customers but its potential has not been able to attract customers and to increase their loyalties. However, today, customers have become increasingly sensitive to time and unwilling to wait for their products. Therefore, companies may struggle to develop their time-based performance to achieve delivery priority (Milling et al., 2000). This advantage can be obtained by reducing product lead time in order to attain superior speed in producing new products and entering new markets (Evans, 1997). In addition, delivery priority, in which companies compete against time, has become a new source of competitive advantage, especially in service organizations, and also manufacturers that explore the advantages of fast delivery, delivery on time and rapid development (Lin et al., 2012; Stalk and Hout, 1990; Thomas, 2008). Lin et al. (2012: p. 732) demonstrated that *delivery sometimes sits under the label of time*. Furthermore, there are three dimensions of time: delivery reliability, speed, and the shortening of NPD time. Therefore, time is utilized instead of delivery in order to cover more issues that relate to time (Lin et al., 2012). In addition, product delivery priority consists of three dimensions: fast delivery, delivery on time, and shortening NPD time. First is fast delivery which is often called “lead time”, which means time from receiving the order until delivering the end product to the customer. The second dimension is the reliability of delivery “on-time delivery”, which measures the frequency of delivering products according to due dates. The third sub-priority is new product development time, which means the time from generating an idea to the final product (Lin et al., 2012; Peng et al., 2011). Many manufacturing companies can compete against time for delivery priority in two different ways. The first one is by shortening the time of new product development and manufacturing to face the competition. In other words, companies can dominate the market if the frequency of producing new products is more than other competitors (Handfield 1995). Second,

manufacturers have obtained and sustained time-based competitive advantage by satisfying customers' demands quickly and punctually. Therefore, these organisations focus on how to attain a superior speed of product delivery (Milling et al., 2000).

Handfield and Pannesi (1992) suggested a delivery speed and reliability matrix, shown in Figure 2.9, which assumes that delivery reliability depends on the level of planning and scheduling of orders, while delivery speed relies strongly on process technology and other process-related elements, which relate to lead time. In this regard, the delivery performance of an organisation could be developed when achieving a good reliability and a good delivery speed through better planning and scheduling of orders as well as by reducing lead times. In addition, many time-based organisations have increasingly been focused on how to achieve delivery priority through improving their competitive capabilities concerning delivery system and development of speed for product and process (Handfield & Pannesi, 1992). As set out in Figure 2.9, due to the poor speed and poor reliability of delivery (Quadrant I), a firm is not able to be an order winner in the market, or it will go out of business. An organisation with good reliability and poor speed (Quadrant II) can achieve a high percentage of on time deliveries, but satisfying the promised dates will be difficult in the future. On the other hand, with the firm that has good speed and poor reliability (Quadrant III), lead time is short, but its deliveries are not on time. Ideally, with good speed and good reliability (Quadrant IV), a firm can reliably deliver products to their customers on time and make deliveries quickly (Handfield and Pannesi, 1992).

**Figure 2.9 Delivery speed and reliability grid**



Source: Handfield and Pannesi (1992, p: 62)

Handfield and Pannesi (1992) stated that planning and scheduling activities have played an important role in setting due dates and defining the delivery schedules. These activities include: planning production, setting master schedules, inventories planning and forecasting demand. Furthermore, the coordination between these planning activities enhances the ability of a company to deliver products on time. In addition, developing delivery reliability entails adopting an accurate forecasting system and an effective manufacturing planning system, through which seasonal changes and trends of market demand can be predicted and met correctly (Handfield & Pannesi, 1992). In addition, a company defines its production capacity, inventory and production schedule based on forecasts of demand according to historical sales. In this respect, the forecasting system should be updated regularly to be useful in providing accurate information for production and inventory planning. Furthermore, accurate forecasts represent an essential factor to manage demand effectively because they help to achieve integration between market demand and planning and the control system (Karmarkar et al., 1990).

The delivery priority represents an objective of speed and reliability which relates to the lead time through which customers wait to receive their products. Moreover, in the external environment of marketing, companies benefit from fast delivery because customers buy from those which deliver their products faster than others. In addition, in the internal environment of operations, speed reflects the rapid flow of materials and information (Slack et al., 1998). As illustrated by Schroeder, (1989), delivery priority refers to the ability of a company to deliver its product in the right place where customers need it rapidly and before competitors. In addition, efficient delivery can be achieved if the product is available when there is a demand. This is with the production for inventory system “Make-to-stock”. However, if the system is production for demand “Make-to-order”, the efficiency of delivery can be measured by the frequency of delivering products on time (Schroeder, 1989).

As New (1992) indicated, according to the traditional wisdom, a short lead time in the make-to-order production may cause a risk for the plant if delivery is not on time. Therefore, lead time should be as long as possible to ensure delivery on time. However, with the new wisdom, the factory can reduce lead time and achieve delivery reliability at the same time because of the high degree of operational integration. Furthermore, Szwejczewski et al. (1997) found that manufacturing organisations which deal with short lead times can deliver their product on time better than those with long lead times.

According to Handfield and Pannesi (1992) and Kaipia (2008), one of the most important factors that impacts on speed and reliability of delivery is market environment, which involves two dimensions, namely the Make-to-stock (MTS) or Make-to-order (MTO) environments. In the MTS environment, the factory deals with a high level of availability of product and customer service, and there is a continuous-flow process. In this case, inventory area receives close attention. On the other hand, speed delivery and reliability play an essential role in an MTO environment, which often deals with job-shop and batch-flow processes (Handfield & Pannesi, 1992; Kaipia, 2008). Many experts agree that with a sequential production system, companies need to accelerate processes for developing their time-based performance. However, to compete against time successfully, there is a need for performing operations in parallel. Therefore, it is very important to *"rethink and redesign processes for time-sensitive operation"* (Spanner et al., 1993: p. 92).

In order to achieve delivery priority, companies need to develop time-based capabilities of operations in two ways: internal design-process integration and external strategic decision integration. The first one aims to reduce production cycle time by matching design requirements to process capabilities. In the second strategy, the focus is on how to coordinate with the external partners of the company, such as suppliers (Droge et al., 2004).

Johnson and Busbin (2000) observed that there are a number of time-based strategies which are employed to achieve delivery priority by reducing product design, manufacturing and distribution time. Accordingly, this priority relates significantly to three operational dimensions: designing, producing, and delivering products (Lin et al., 2012). First, companies can attain delivery priority if they design and improve the new product quickly, based on customer requirements (Hum & Sim, 1996). Moreover, time-to-market can be decreased through several techniques such as computer-aided design (CAD), computer-aided engineering (CAE), and concurrent engineering (CE) (Droge et al., 2004). The second dimension is manufacturing lead time, by which a company can improve time-based performance (Jayaram et al., 1999). Finally, efficient distribution systems are essential to decrease delivery time and to benefit from advantages of time-based manufacturing strategies (Tammela et al., 2008). In addition, cross-functional teams represent an important time-based strategy to develop the delivery performance of organisations through reducing cycle time when implementing many activities simultaneously (Droge et al., 2004; Spanner et al., 1993).

### **2.5.3 The Achievement of Delivery Priority through Using CFTs**

Spanner et al. (1993) pointed out that cycle time can be reduced by CFTs when implementing many activities simultaneously rather than sequentially. In addition, through adopting CFTs as one of the most important time-based strategies, the relationship with customers and suppliers could be closed due to the effective interactions and communications between them. This can lead to better understanding of product needs and to commitment to quality and schedules, thus improving fast-cycle capability (Spanner et al., 1993).

Due to the use of CFTs for designing products, processes, and facilities, overall cycle time can be decreased. The reason for this is the ability of CFTs to accelerate innovation processes because of the diversity of their expertise and knowledge leading to performing their tasks quickly, particularly in NPD projects (Droge et al., 2004). Moreover, organisations can develop time-based capabilities through adopting CFTs, which are essential to accelerate operations (Hum & Sim, 1996). Furthermore, using CFTs can positively impact schedule performance due to the functional diversity of teams (Keller, 2001).

Many companies utilize CFTs to develop planning and scheduling activities through sharing information between members, and consult each other when integrating their plans. Furthermore, using this mechanism significantly leads to achievements in conformity between marketing and operations plans, thus enabling delivery on time (Tang, 2010). In addition, the adoption of CFTs helps to collect and assimilate market information that can be integrated; this is valuable due to the high degree of cooperation and coordination between members. This can underpin the effectiveness of these teams in developing their performance and speed up (NPD) process (Gemser & Leenders, 2011).

Bunduchi (2009) and Krajewski and Ritzman (1993) illustrated that NPD time, which means the time from generating an idea to the final product, can be a potential success factor for organizations when using CFTs to produce and launch new products frequently and before competitors. In addition, reducing this time depends on the integration of NPD teams through exploring and determining market opportunities, developing the product design and identifying operations capabilities to produce new products whilst taking into account cost (Krajewski and Ritzman, 1993). As mentioned by Parker (2003), through utilising CFTs, new product development time could be reduced, because there are many parts of this process that can be executed concurrently, as well as eliminating many features of the time-consuming sequential process. In addition, as stated by Sherman et al. (2005), the use of integrated

information systems by CFTs has played an essential role in developing new products quickly as a result of recording, retrieving and utilising detailed information from past projects rapidly and accurately. Furthermore, the adoption of the integrated information mechanisms such as enterprise resource planning (ERP) by CFTs strongly contributes to reducing the environmental uncertainty, thus enhancing the ability of an organisation to predict market demand accurately to be able deliver products to their customers on time (Sharma, 2013; Tang, 2010). In addition, adopting communication technology strategy such as internet by CFTs can lead to effective communications between members and with other parts of an organisations resulting in rapid and successful NPD process (Chen, 2007).

Many researchers, such as Azzone et al., (1991); Griffin, (1997); Henke et al., (1993); McDonough, (2000); Tatikonda & Montoya – Weiss, (2001), illustrated that the best way for organisations to develop new products quickly and before competitors is through utilising CFTs. This is because of the innovation of these teams (Alves et al., 2007) and their ability to perform the innovative activities of processes in parallel. Furthermore, using CFTs for developing new products can lead to developing new products more frequently, because cycle time will be shorter than before due to the learning and advanced experiences (Spanner et al., 1993).

In addition, the effective communications and collaboration between people of CFTs can enhance their ability to perform their tasks successfully and quickly (Ernst, 2002). Moreover, Dayan and Basarir (2010) suggested that the use of CFTs is positively related to the performance of product and NPD time as a result of the following activities of these teams:

- 1- Gathering and disseminating information quickly.
- 2- Making decisions rapidly when there are changes in customer preferences.
- 3- Solving problems that may occur when CFTs perform their tasks in due course.
- 4- Responding to the attacks of the competitors.

Calantone et al. (2002) and Daspit et al. (2013) indicated that NPD time can be reduced when adopting CFTs in developing new products as a result of the early involvement of manufacturing in NPD teams. Furthermore, speed to market can be accelerated when adopting CFTs because of their ability to develop, produce, and market products successfully and rapidly. To achieve this ability, CFTs should be effective in gathering and processing the



huge amount of market information and new knowledge in order to benefit from their diverse expertise for the innovation (Lovelace et al., 2001). In addition, using CFTs helps to decrease NPD time as a result of the coordination among members to resolve the different functional problems that may occur during this process. Moreover, sharing information between these people can enhance the efficiency of communication, thus accelerating NPD speed (Park et al., 2009).

Integrated production decisions being made by marketing and operations members together within CFTs contributes to developing the delivery performance of an organization due to the convergence between these two functional areas, represented by shared knowledge and expertise (Prabhaker, 2001; Song & Swink, 2002; Tang, 2010). In this respect, making correct decisions on production resources and facilities (e.g., factory layout, production technology, and handling materials equipment) at the right time by CFTs has significant positive impact on manufacturing time, which is an important part of delivery time. The reason behind this is the smooth flow of the materials and information across production lines, thus meeting customer's demand as follows (Stalk, 1988; Stalk & Hout, 1990; Slack et al., 2009):

- Factory layout: Factory layout decision plays an important role in reducing production complexity and time consumption in manufacturing processes, thus shortening delivery time.
- Production technology: By adopting new technology, manufacturers can improve their delivery performance when they become fast innovators. Moreover, manufacturing time can be reduced through utilizing advanced techniques such as computer-aided design/ engineering, CAD and CAE (Droge et al., 2004; Prabhaker, 2001).
- Production process flow: Production process flow identifies the extent to which activities are arranged sequentially and the extent to which they are arranged in parallel. If the first activities do not share production resources, that means they can be rearranged in parallel in order to reduce manufacturing time.

- Balance of production line: If distribution of production resources on workstations is imbalanced, delays and bottlenecks can be occurred in production line. This point significantly impacts on manufacturing time and production schedules.
- Handling materials: Factories need to use appropriate transport equipment for handling materials in the production line in order to reduce manufacturing time. In addition, this equipment should be suitable for the production layout.

Additionally, managing demand has significant impact on delivery performance. This depends on how orders are dealt with. As a result of the convergence between members of CFTs, marketing people can benefit from the advantages of reducing manufacturing time when they deal more effectively with customer orders. This can be achieved when delivering product at the right price in the right place at the right time (Azzone et al., 1991; Kotler & Armstrong, 2010; Lin et al., 2012; Tammela et al., 2008).

## **2.6 Summary**

In this chapter, the literature on the main issues concerning the integration between marketing and operations functions (i.e., reasons, mechanisms, development, and achievement) has reviewed. Through this reviewing, light has been shed on marketing and operations relationship and their interactions in three key areas: new product development, marketing and operations planning, and dependability of delivery. In addition, the literature review highlighted the fundamental strategies for interfacing marketing with operations to become more market oriented, in particular by utilising CFTs. This chapter also underlined the potential problems which impede the joint work of these two groups within CFTs. Furthermore, the importance and the role of using CFTs to achieve delivery priority has also been spotlighted through this review, reflecting the significant relationship between marketing and operations interface and product delivery priority. In order to address the gap in knowledge of marketing and operations integration, the researcher analysed several studies on this subject and identified four distinct streams of research, as set out in Appendix 2. After this analysis, the researcher could not identify any empirical research which comprehensively investigated the reasons why marketing and operations functions should be convergent, for

better understanding. In addition, it is clear that there is limited empirical evidence of how to achieve this convergence through the different mechanisms (Felekoglu et al., 2013; Song et al., 2010). Furthermore, much of the empirical work on how to achieve the integration does not take into account the potential problems that may be associated with implementing cross-functional mechanisms. Paiva (2010) similarly emphasised the need for examining these problems which may occur when different functional groups work together, such as marketing and operations personnel. According to the analysis of the studies grouped in Appendix 2, research on how to improve CFI, particularly between marketing and operations areas, is scarce and lacking in empirical evidence by which the relevant factors that may impact the effectiveness of cross-functional mechanisms can be supported. Furthermore, there is a need for more empirical research on the contribution of marketing and operations integration to achieving competitive priorities, such as speedy delivery as a customer value, taking into consideration the competitive position of the firm. This is consistent with the conclusions of Marques et al. (2014); Sharma (2013); and Gattiker (2007), who argued that there is a need for more knowledge about the marketing and operations interface. Because of these observed gaps, it can be predicted that this study will contribute to knowledge of the integration between marketing and operations functions, through an empirical investigation of the four phases of this interface: needs, methods, development, and achievement in the Iraqi context.

## **CHAPTER THREE**

### **CONCEPTUAL FRAMEWORK**

#### **3.1 Introduction**

As pointed out by Miles and Huberman, (1994), the purpose of the theoretical framework is to explain graphically or narratively the key issues being studied, taking into account the main factors, constructs, and the relationships between them. The researcher sheds light on the main relevant themes which emerged from the literature review and then sets them into a framework to provide reasonable explanations about the research questions and to reveal the inter-relationships between these issues within a conceptual structure.

As illustrated in the literature review, many studies have stated that the integration between marketing and operations functions is critical for developing competitive capabilities of manufacturing organisations to meet market requirements rapidly (Gonzalez et al., 2004; Hausman et al., 2002; Kim et al., 2010; Paiva, 2010). Several articles suggested a number of marketing and operations integration models (e.g., Hausman et al. 2002; Hausman and Montgomery 1997; Kulp et al., 2004; Sawhney and Piper 2002; Tang, 2010), but limited empirical work has been done on how to attain and develop this interface (Felekoglu et al., 2013; Paiva, 2010; Song et al., 2010). Therefore, there is a need for more research on this phenomenon to become better understood (Marques et al., 2014). To narrow this gap, the researcher designed a theoretical framework as a guideline for investigating the reasons why marketing and operations groups should work jointly, and how this convergence can be achieved and developed in the Iraqi context, through adopting cross-functional teams (CFTs) in order to maximise delivery performance.

Those issues that emerged from the literature review relating to the marketing and operations integration described in this framework have been examined by the researcher when conducting the research in the two case study organisations using semi-structured interviews and direct observation. This fieldwork has helped to recognise the objectives of the present study. In addition, the present framework has been built on four phases, namely the need, method, development, and achievement. The study's conceptual framework is outlined in Appendix 3.

### 3.2 Needs phase (Reasons for Interfacing Marketing with Operations)

According to the literature reviewed in chapter 2, this study found that due to the high interdependency of marketing and manufacturing departments, and the uncertainty, the joint work of these two functions is necessary in three main areas, namely product and process development, marketing and production planning, dependability of delivery. In new product development (NPD) projects, the joint involvement of marketing and operations groups in this process is the key for developing new products successfully (Brettel et al., 2011; Calantone et al., 2002; Guenzi and Troilo, 2006; Hausman et al., 2002; Kong et al., 2015; Slack et al., 2009). However, as indicated by Song and Swink (2002), these two areas have different functional objectives and responsibilities represented in NPD activities. This may negatively influence a new product launch if one of them is dominant over the other. Therefore, marketing and operations should be closely convergent through an effective communication and coordination (Song & Swink, 2002). In the production environment, it is difficult to achieve the conformity between sales/marketing and production plans and schedules when these two departments make their plans and schedules in a discrete set (Tang, 2010). This is because of the interdependency of their resources planning and scheduling activities, and uncertainty (Gattiker, 2007; Sharma, 2013). Therefore, many authors such as Berglund et al., (2011); Brettel et al. (2011); Fisher (1997); Hausman et al. (2002); Konijnendijk (1994); Lee & Tang (1997); Parente, (1998); Sharma (2013); Tang (2010); and Tavares Thome et al. (2012) highlighted the importance and critical role of the coordination between marketing and operations areas in matching their plans and decisions as a result of reducing the uncertainty. In terms of the dependability of delivery, due to the significant effect of marketing and operations functions on lead time, manufacturing organisations could be able to deliver products to their customers on time through adopting time-based strategies such as effective distribution systems and computer-aided manufacturing (CAM) (Azzone et al., 1991; Crittenden et al., 1993; Droge et al., 2004; Hausman et al., 2002; Kim et al., 2010; Lin et al., 2012; Prabhaker, 2001; Sawney and Piper 2002; Slack et al., 2009).

Despite such a range of literature, the concepts of the above three key areas still need to be more empirically and comprehensively proven in order to reveal and explain the underlying reasons behind marketing and operations integration in its contextual setting, thus contributing to knowledge (Marques et al., 2014). Hence, the first research question ***“Why should marketing and operations groups work together?”*** has been conceptualised to be answered in the field. To answer this question, the following objective has been pursued.

***“To investigate the reasons for interfacing marketing with operations in the Iraqi public textile industry sector.”***

The adopted method for the integration has been explained in the next subsection.

### **3.3 Methods Phase (Cross-Functional Teams)**

As mentioned in the previous literature review, there have been studies which have attempted to recognise how to achieve the integration between marketing and operations functions through different strategies. For example, Bendoly et al., (2012); Brettel et al., (2011); Griffin & Hauser, (1996); Jassawalla & Sashittal, (2006); Song & Swink, (2002); Swink and Song, (2007); Troy et al., (2008); Tsai & Hsu, (2014); Webber, (2001) all highlighted the importance of collaboration, coordination, and sharing of resources and experiences among marketing and operations groups to be integrated. In addition, sharing information between marketing and operations personnel to be processed can be a valuable resource for coordination, due to the huge amount of this information (Brettel et al., 2011; Mohsen & Eng, 2013; Song & Swink, 2002; Tang, 2010). Hence, organisations can respond to market demand rapidly when managing the marketing and operations interactions effectively, by which speed and innovation can be achieved (Daspit et al., 2013; Gonzalez et al., 2004; Griffin, 1997; Horwitz, 2005; Jassawalla and Sashittal, 2006; Lovelace et al., 2001; Parker, 2003). Most of these authors mentioned that such practices, which are grouped into three main characteristics, namely collaboration and coordination, sharing information, and responsiveness, can be attained when marketing and operations people work together within cross-functional teams (CFTs).

Despite the contributions of this literature, empirical research on how to achieve the integration between marketing and operations by utilising different mechanisms is scattered and limited compared with the other aspects of this interface, which are demonstrated in the existing studies (Felekoglu et al., 2013; Song et al., 2010). In order to narrow a knowledge gap, the second research question ***“How can the integration between marketing and operations functions be achieved by using CFTs?”*** has been developed to be answered in the field. The following research objective has been pursued to answer this question.

***“To explore how to attain the integration between marketing and operations functions through utilizing CFTs in the Iraqi public textile industry sector”***

In the next subsection, the development of the integration between marketing and operations functions by identifying the potential problems that could be associated when using CFTs to be resolved will be discussed.

### **3.4 Development Phase (Potential Problems of using CFTs)**

In the literature, many studies referred to the potential problems which negatively influence the effectiveness of cross-functional integration (CFI) particularly CFTs. This study classified these problems into main three impediments that may occur when utilising CFTs. The first problem is the conflict among CFTs members that is likely to occur due to their different functional objectives and loyalties (Calantone et al., 2002; Crittenden et al., 1993; Daspit et al., 2013; Holland et al., 2000; Majchrzak et al., 2012; Parker, 2003). Second, lack of empowerment can be problematic for CFTs because of their limited authority and autonomy (Henke et al., 1993; Holland et al., 2000; Jasawalla & Sashittal, 1998; Nguyen & Rukavishnikova, 2013; Parker, 2003; Trent and Monczka, 1994). Finally, lack of communication among members and with other parts of the company negatively impacts on the characteristics of teams such as the diverse knowledge due to the different opinions and perspectives (Holland et al., 2000; Hoegl, 2005; Kim et al., 2006; Kotlarsky et al., 2015; Kratzer, 2001; Lalsing et al., 2012; Leenders et al., 2003; Lovelace et al., 2001; Majchrzak et al., 2012; Nguyen and Rukavishnikova, 2013).

Despite such studies, there is a need for investigating these problems through empirical research when different functions of a firm, in particular marketing and operations, work together within CFTs for the integration to be developed (Paiva, 2010). Therefore, the third research question ***“What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?”*** has been conceptualised, to be answered in the field. Hence, this study posits the following research objective:

***“To identify the potential problems that may occur during the implementation of CFTs in the Iraqi public textile industry sector.”***

This development phase is followed by the explanation of the achievement phase in which the relationship between product delivery priority and CFTs will be demonstrated.

### 3.5 Achievement Phase (Product Delivery Priority)

As stated by many authors in the literature review, due to the ability of effective CFTs to improve time-based capabilities of firms, the delivery performance of these organisations can be developed in terms of: 1) delivery time when accelerating activities or performing tasks simultaneously (Droge et al., 2004; Handfield & Pannesi, 1992; Hum & Sim, 1996; Johnson & Busbin, 2000; Lin et al., 2012; Parker, 2003; Spanner et al., 1993), 2) delivery on time as a result of matching sales/marketing and operations plans and schedules (Droge et al., 2004; Handfield & Pannesi, 1992; Hum & Sim, 1996; Johnson & Busbin, 2000; Parker, 2003; Spanner et al., 1993), and 3) new product development time due to the innovative activities for developing new products rapidly (Azzone et al., 1991; Droge et al., 2004; Hum & Sim, 1996; Jayaram et al., 1999; Johnson & Busbin, 2000; Lin et al., 2012; Parker, 2003; Ling Sim & Curatola, 1999; Spanner et al., 1993).

Despite this amount of research, there is still a great need for an empirical study on how to develop delivery performance in the Iraqi industry sector (University of Technology in Iraq, 2013). Therefore, the fourth research question ***“How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?”*** has been summarised to be answered in the field. Hence, this study posits the following research objective:

***“To investigate the delivery performance of Iraqi public textile manufacturing organisations which utilize CFTs.”***

### 3.6 Theoretical Propositions of Study

In order to analyse the qualitative data of this explanatory research through explanation-building as an appropriate data analysis technique, the conceptual propositions of this study should be built initially, to be developed for the final explanations (Yin, 2009). Therefore, the following propositions of this study have been presented as issues that emerged through summarising the previous literature review. These issues are incorporated into the theoretical framework of the present study which is developed in this chapter:



For the effective implementation of CFTs to achieve a better marketing and operations integration in Iraqi public textile organisations for delivery priority, the following is likely to have happened:

### **I- The reasons why marketing and operations should work together.**

Due to the interdependent tasks of marketing and operations people when developing new products, the two groups should work together in order to implement this process successfully and rapidly (Brettel et al., 2011; Calantone et al., 2002; Gonzalez et al., 2004; Guenzi and Troilo, 2006; Hausman et al., 2002; Song and Swink, 2002; Swink & Song, 2007).

Because of the uncertainty of manufacturing environments internally and externally, marketing and operations groups work together when making their plans and decisions to be coordinated (Berglund et al., 2011; Brettel et al., 2011; Fisher, 1997; Hausman et al., 2002; Lee & Tang, 1997; Malhotra & Sharma, 2002; Parente, 1998; Sharma, 2013; Tang, 2010; Tavares Thome et al., 2012).

Due to the significant impact of marketing and production capabilities on delivery performance of an organisation, marketing and operations people should work jointly to achieve the dependability of delivery (Azzone et al., 1991; Crittenden et al., 1993; Droge et al., 2004; Hausman et al., 2002; Kim et al., 2010; Lin et al., 2012; Prabhaker, 2001; Sawney and Piper 2002; Slack et al., 2009).

### **II- The achievement of marketing and operations integration by using CFTs.**

The integration between marketing and operations functions could be achieved when using CFTs due to the collaboration among members (Bendoly et al., 2012; Brettel et al., 2011; Luca & Atuahene – Gima, 2007; Griffin & Hauser, 1996; Hirunyawipada et al., 2010; Jassawalla & Sashittal, 2006; Song & Swink, 2002; Swink & Song, 2007; Troy et al., 2008; Tsai & Hsu, 2014; Webber, 2001).

The marketing and operations strategies could be integrated when sharing information among members of CFTs (Brettel et al., 2011; Mohsen & Eng, 2013; Slack et al., 2013; Song & Swink, 2002; Tang, 2010).

The integration between marketing and operations departments could be achieved due to the rapid responsiveness of CFTs to the market information (Bruns, 2013; Brettel et al., 2011; Daspit et al., 2013; Gonzalez et al., 2004; Griffin, 1997; Horwitz, 2005; Jassawalla and Sashittal, 2006; Lovelace et al., 2001; Parker, 2003; Song & Swink, 2002).

### **III- The potential problems of marketing and operations joint work within CFTs?**

The effectiveness of CFTs could be influenced negatively if there is a conflict between members. This potential conflict impedes the joint work of marketing and operations groups (Calantone et al., 2002; Crittenden et al., 1993; Daspit et al., 2013; Holland et al., 2000; Majchrzak et al., 2012; Nguyen & Rukavishnikova, 2013; Parker, 2003).

The performance of CFTs may be negatively influenced if there is a lack of empowerment in terms of authority and autonomy when they make their decisions and implement their tasks (Henke et al., 1993; Holland et al., 2000; Jasawalla & Sashittal, 1998; Nguyen & Rukavishnikova, 2013; Parker, 2003; Trent and Monczka, 1994).

If there is lack of communication between members of CFTs and with other parts of an organisation, the effectiveness of these teams may be influenced negatively (Hoegl, 2005; Holland et al., 2000; Kim et al., 2006; Kotlarsky et al., 2015; Lalsing et al., 2012; Leenders et al., 2003; Lovelace et al., 2001; Majchrzak et al., 2011; Nguyen and Rukavishnikova, 2013; Parker, 2003).

#### **IV- The development of delivery performance by utilising CFTs.**

The delivery performance of Iraqi public textile organisations would be developed as a result of the contributions of using CFTs to reducing delivery time (Droge et al., 2004; Handfield & Pannesi, 1992; Hum & Sim, 1996; Johnson & Busbin, 2000; Lin et al., 2012; Parker, 2003; Spanner et al., 1993).

The delivery performance of Iraqi public textile organisations may be improved because of the positive effect of utilising CFTs on the reliability of delivery (Droge et al., 2004; Handfield & Pannesi, 1992; Hum & Sim, 1996; Johnson & Busbin, 2000; Parker, 2003; Spanner et al., 1993).

The delivery performance of Iraqi public textile organisations would be improved due to the contributions of adopting CFTs to developing new product rapidly (Azzone et al., 1991; Droge et al., 2004; Hum & Sim, 1996; Jayaram et al., 1999; Johnson & Busbin, 2000; Lin et al., 2012; Parker, 2003; Ling Sim and Curatola, 1999; Spanner et al., 1993).

### **3.7 Summary**

In order to carry out this project in the two case study organisations in the Iraq context through using semi-structured interview and direct observation, the researcher designed a theoretical framework and propositions to guide him in the field. This framework has been built upon the issues that emerged from the literature review, which are divided into four phases, namely the needs, methods, development, and achievement. According to these phases, the interview questions have been developed, and observation themes have been summarised in accordance with the fourth phase.

## **CHAPTER FOUR**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

The previous literature review chapter presented the extensive literature on the integration between marketing and operations functional areas in manufacturing organisations, and identified the main concepts and theories underlying this research. In this chapter, methodological issues and the selection of appropriate philosophical approaches, strategy, and methods for this study and their justifications are discussed. In this respect, a research methodology represents an overall approach to the research process which concerns the key issues of collecting data such as why the researcher collected certain data, what data were collected, and where and when the researcher collected the data (Collis & Hussey, 2003). Therefore, methodology can be an essential guide to the researcher in making decisions about the best choices by which research objectives can be achieved. In this chapter, the researcher illustrates how to employ research methodology in order to answer the questions of the present explanatory study.

#### **4.2 What is Research?**

In the relevant literature, there is no specific definition of research, because it means different things to different people; but there is consensus that research is a process of investigation which aims to increase knowledge through adopting a systematic process (Hussey & Hussey, 1997). To achieve reliable results, research should be conducted systematically by utilising appropriate data collection methods. In addition, the research problem must be addressed in order to determine the objective of research (Collis & Hussey, 2003). As illustrated by Blumberg et al. (2014: P. 9), there are four types of research, namely: reporting, descriptive, explanatory, and predictive. The present study is explanatory research because it “*goes beyond description and attempts to explain the reasons for the phenomenon to occur*”.

### **4.3 Research Design**

The process of this research consists of five phases beginning with research philosophy, the research approach, the research strategy, the data collection, and analysis methods (Saunders et al., 2009). In this chapter, the relevant issues of these phases will be illustrated. In addition, the researcher will demonstrate the appropriate choices of these phases and the reasons for their adoption. These include: realism philosophy, deductive and inductive approach, case study, semi-structured interviews and direct observation, and explanation-building.

### **4.4 Research Philosophy**

Research philosophy relates to the knowledge in terms of the development and the nature by which researchers can make essential assumptions about the way in which the world works. Moreover, these assumptions underpin the research strategy and the methods as a part of this strategy (Collis & Hussey, 2003; Saunders et al., 2007). In addition, by understanding the philosophical concepts, the overall research design and strategy can be specified and clarified (Blumberg et al., 2014; Easterby-Smith et al., 2004). For many researchers, a paradigm represents one of the main philosophical concepts of social sciences (Eriksson & Kovalainen, 2008). Collis and Hussey, (2009: p55) mentioned that a research paradigm means “a philosophical framework that guides how scientific research should be conducted”. Many authors, such as Collis and Hussey (2009), have pointed out that there are two main research paradigms used in social science, namely positivism and interpretivism.

#### **4.4.1 Ontological and Epistemological Assumptions of Paradigm**

As mentioned by several scholars such as Collis & Hussey, (2003); Saunders et al. (2007), there are two major assumptions of a paradigm as a research philosophy, namely ontology and epistemology. Each relates significantly to the way in which the researcher thinks about the research process (Saunders et al., 2009). Ontology is "the study of being" (Crotty, 1989, p. 10 cited in Scotland, 2012). With this approach, a position should be taken by the researchers about their views of real things and how these things work in the real world (Scotland, 2012). The ontological assumption is related to the nature of reality, which is

either objective or subjective (Collis & Hussey, 2003; Creswell, 1994; Saunders et al., 2009). In this regard, objectivism refers to reality as independent, while subjectivism assumes that reality is produced through social processes (Neuman & Kreuger, 2003). Ontologically, the reality is objective if *"the social entities exist in reality external to social actors concerned with their existence"* (Saunders et al., 2009, p. 110). But reality is subjective if it is constructed by perceptions of people and their actions who make their own sense of this social reality (Tubey et al., 2015). As Collis and Hussey (2009) stated, under positivism, social reality is objective and external to the researcher. Therefore, it is a single reality. Furthermore, under interpretivism, social reality is subjective because it is socially constituted. Therefore, individuals make their own different senses of social reality, thus there are said to be multiple realities. On the other hand, Epistemology is the relationship between the researcher and knowledge. With this approach, the concern is with generating, gaining, and communicating knowledge (Scotland, 2012). Furthermore, the epistemological question is what is *"the nature of the relationship between the would-be knower and what can be known?"* (Guba & Lincon, 1994, p.108). Therefore, the researcher needs to define the knowledge in a field of study (Saunders et al., 2009). According to Collis and Hussey (2009), the answer to the epistemological question reflects the nature of the relationship between the researcher and what is being studied. Furthermore, positivist and interpretivist views regarding this relationship are different. In this respect, with positivism, a phenomenon can be regarded as valid knowledge only when it is observable and measurable. In this context, positivists believe that researchers should be distant when they conduct their research (Collis and Hussey, 2003). On the other hand, under interpretivism, the convergence between the researcher and what is being studied is required for participative enquiry (Collis and Hussey, 2009).

#### **4.4.2 Positivism vs. Interpretivism**

According to the positivistic paradigm which is adopted in the natural sciences (Blumberg et al., 2014), gaining knowledge draws on the observation of an independent and pre-existing reality. Furthermore, the researchers should be independent of that being researched, to avoid any distortion of their objective views (Collis and Hussey, 2009). Blumberg et al. (2014) and Saunders et al. (2009) demonstrated that this approach is concerned with objective facts rather than impressions. Under this philosophy, the researcher can define his/her selection of what to study and who is to research it through objective criteria instead of human interests (Easterby-Smith et al., 2008). Alternatively, interpretivism paradigm can be adopted in the social sciences. With this paradigm, the reality is socially constructed by the perceptions of people, resulting in multiple constructed realities of various individuals (Sobh & Perry, 2006). Interpretivism is concerned with understanding human actions as social actors from different participant's points of view (Collis and Hussey, 2009). As mentioned by Collis and Hussey, "This qualitative approach stresses the subjective aspects of human activity by focusing on the meaning, rather than the measurement, of social phenomena" (Collis and Hussey, 2003). With this paradigm, the aim is to understand the meanings of social phenomena subjectively by understanding individuals' impressions, and these phenomena are structured from the perceptions and consequent actions of people (Blumberg et al., 2014; Saunders et al., 2009). Therefore, the focus here is on exploring the complexity of social phenomena and how to gain interpretive understanding. Furthermore, interpretivism can be promoted through the belief that the reality of a social phenomenon is not objective but highly subjective, because it is constituted by an individual's perceptions (Collis and Hussey, 2009). As noted by Blumberg et al. (2014), between positivism and interpretivism philosophies other research paradigms exist, such as critical theory and realism, depending on the philosophical assumptions of positivism or interpretivism. They added that "The most notable of these is realism". Due to the relevance of realism to conduct this research, the researcher chooses it to be discussed in the next subsection. Collis and Hussey (2003) summarised the features of the two main paradigms as shown in Table 4.1.

**Table 4.1 Features of the two main paradigms**

<b>Positivism paradigm</b>	<b>Interpretivism paradigm</b>
<b>Tends to produce quantitative data</b>	Tends to produce qualitative data
<b>Uses large samples</b>	Uses small samples
<b>Concerned with hypothesis testing</b>	Concerned with generating theories
<b>Data is highly specific and precise</b>	Data is rich and subjective
<b>The location is artificial</b>	The location is natural
<b>Reliability is high</b>	Reliability is low
<b>Validity is low</b>	Validity is high
<b>Generalises from sample to population</b>	Generalises from one setting to another

Source: Collis and Hussey, (2003, p: 55)

#### **4.4.3 Realism**

Realism as a research philosophy has principles of both positivism and interpretivism paradigms (Blumberg et al., 2014; Healy & Perry, 2000). According to Blumberg et al., (2014), under this philosophy of social sciences, the reality can be independent of human beliefs and behaviour. But because subjectivity is inherent to humans, the researcher needs to understand people and their behaviour. Furthermore, reality exists independently of the researcher's mind, thus it is an external reality (Sobh and Perry, 2006). While reality is single and concrete under positivism, and has multiple realities with interpretivism, realists deal with multiple perceptions regarding a single, mind-independent reality (Healy & Perry, 2000). This latter reality is "*not wholly discoverable or knowable*" (Krauss, 2005, P. 761). Realism is imperfectly and probabilistically understood, and it can act as a metaphorical window on the world (Guba & Lincoln, 1994). In addition, through triangulating cognition processes, the reality of a social phenomenon can be better defined (Christie et al., 2000). As commented by Perry et al., (1997, P. 554) cited in Christie et al., (2000), "*a perception for realists is a window on to reality from which a picture of reality can be triangulated with other perceptions*".



As stated by Sobh and Perry, *"the company's external environment is always more important than the internal. The real decisions are made in the world outside....."*. Therefore, the focus of marketers should be on how to satisfy the needs of an external market place. As a result, realists conduct their research to understand the common reality of an economic system (Sobh and Perry, 2006). Philosophical assumptions that underpin the three different paradigms of science, namely positivism, interpretivism, and realism are summarized in Table 4.2.

As mentioned by Boing, (1994), the realism paradigm is appropriate for conducting research in areas such as inter-organizational relationships and relationship marketing which is usually contemporary and pre-paradigmatic. Furthermore, this paradigm is suitable for researching a complex social phenomenon which includes reflective human activity such as marketing (Sobh & Perry, 2006). As pointed out by Healy and Perry, (2000), realism becomes more relevant when adopting in depth interview methodology by using probe questions and concentrating on the meaning in order to develop a theory.

**Table 4.2 The philosophical assumptions of the social research paradigms**

Element	Positivism	Interpretivism	Realism
<b>Ontology</b>	Reality is real and comprehensible.	Multiple local and specific "constructed" realities.	Reality is "real" but only imperfectly and probabilistically and so triangulation from many sources is required to try to know it.
<b>Epistemology</b>	Findings true-researcher is objective by viewing reality through a "one-way mirror".	Created findings-researcher is a "passionate participant" within the world being investigated.	Findings probably true-researcher is value-aware and needs to triangulate any perceptions he or she is collecting.
<b>Common methodologies</b>	Mostly concerned with a testing of theory. Thus mainly quantitative methods such as: survey, and verification of hypotheses.	In-depth unstructured interviews, participant observation, action research, and grounded theory research.	Mainly qualitative methods such as case studies and interviews.

Source: Adapted from Sobh & Perry, (2006, P: 1195)

Consequently, it is clear that realism can fill the gap between the two other paradigms: positivism and interpretivism through the following differences:

- Ontologically, under realism, the researcher deals with complex, social phenomena including reflective humans in a "real" world "outside" for discovering (Sobh & Perry, 2006).
- The real world can be discovered when adopting realism by naming and describing broad generative mechanisms through which many people operate in the world (Healy and Perry, 2000).
- Epistemologically, realists are value aware, and the perceptions of participants could be a window to reality by which a view of reality can be triangulated with other perspectives (Christie et al., 2000; Perry et al., 1997).
- Realism is mainly concerned with inductive theory building for triangulating the external reality of the phenomenon being studied through the data, but some deduction for developing conceptual framework as a guideline in the field (Perry, 1998).

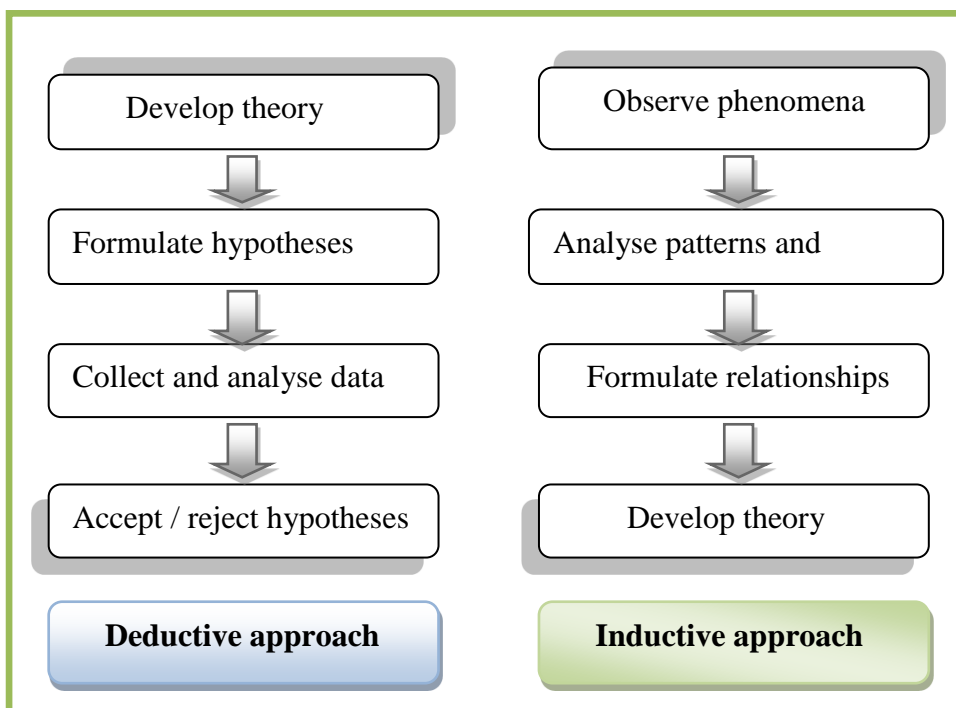
According to the above discussion and for these reasons, realism is an appropriate scientific paradigm for researching the integration between marketing and operations functions.

#### **4.5 Research Approach**

There are two key research approaches, induction and deduction. In the deduction process, the researcher starts with establishing theoretical propositions from the literature review and then he/she moves to the field in order to obtain empirical evidence. On the other hand, through the induction process, a certain phenomenon can be observed by the researcher in the field, from which he/she can draw a certain conclusion, and from this can build a theory (Cavana et al., 2001). In addition, under a deductive approach, researchers can develop a

theory and hypotheses, and they test each hypothesis by empirical observation. But with an inductive approach, the researchers can build a new theory according to analysis of collected data. Through induction, the research can be concerned with the context in which events were taking place. Therefore, a small sample of subjects being studied is likely to be more appropriate for a study under an inductive approach rather than a large sample as with the deductive approach (Saunders et al., 2009) (See Figure 4.1).

**Figure 4.1 inductive and deductive Approaches**



Source: Adapted from Cavana et al., (2001, p: 36)

The methodological assumption of the Positivism paradigm is concerned more with the deductive approach, whereas the Interpretivism paradigm is concerned more with the inductive approach (Collis & Hussey, 2003). Table 4.3 illustrates the main differences between induction and deduction.

**Table 4.3 Main differences between inductive and deductive approaches to research**

<b>Deduction emphasises</b>	<b>Induction emphasises</b>
Scientific Principles Moving from theory to data The need to explain causal relationships between variables The collection of quantitative data The application of controls to ensure validity of data The operationalization of concepts to ensure clarity of definition A highly structured approach Researcher independence of what is being researched The necessity to select samples of sufficient size in order to generalise conclusions	Gaining an understanding of the meanings humans attach to events A close understanding of the research context The collection of qualitative data A more flexible structure to permit changes of research emphasis as the research progresses A realisation that the researcher is part of the research process Less concern with the need to generalise

Source: Saunders et al. (2009, p : 127)

Dubois and Gadde (2002) have suggested an abductive approach to carry out their single case research. Under this approach, the researcher continuously moves between an empirical observation and a theoretical framework in order to match between theory and reality, and direct and redirect the study. Furthermore, through systematically combining process, conceptual framework, and empirical fieldwork, analysis can evolve simultaneously to help to develop new theories. In the abduction process, the argument is to rely on a priori theory more than would be the case with true induction. New theory development is important, but it is developed over time. With an abductive approach, the phenomena under study should be considered in the light of a theoretical framework when developing theory to discover new insights. Furthermore, in an abductive process, there is great emphasis on the continuous interplay between theory and empirical observation. Consequently, the abductive approach as a non-linear process is closer to an inductive than a deductive approach (Dubois and Gadde, 2002).

In order to investigate inter-functional relationships such as marketing relationship through a realism research, the researcher needs to adopt an inductive approach for triangulating the external reality of the research in the real world, through different perceptions of people to become better understood (Perry, 1998). Therefore, the induction process was adopted by the researcher in order to collect information about marketing and operations integration from the field through carrying out semi-structured interviews by using probe questions such as "how" and "why", and latter building of theory. Under the realism paradigm, the researcher can use prior theory as additional evidence to triangulate on the external reality of case study research, from which the theoretical framework of the research can be improved (Perry, 1998; Sobh & Perry, 2006). Consequently, in this study, the conceptual framework and propositions have been developed emerging from the literature review by deduction, as a guideline for the researcher when collecting and analysing data (Cavana et al., 2001). According to Saunders, Lewis, and Thornhill (2009), "Not only is it perfectly possible to combine deduction and induction within the same piece of research, but also in our experience it is often advantageous to do so". Furthermore, the researcher can benefit from existing theory and develop new and useful theory when adopting deductive and inductive approaches respectively (Perry, 1998). For these reasons, both deductive and inductive approaches were utilised to conduct this research.

#### **4.6 Research Strategy**

As mentioned by Denscombe (2003), there are various options and alternatives which the social researcher faces when making decisions about the selection of a research strategy. Each strategy relates to a set of assumptions regarding the social phenomenon under study, and there are also a number of advantages and disadvantages of each strategy. Thus, there is no "one right" way to select, but some strategies may be better suited than others for investigating specific issues or a particular phenomenon.

Yin (2009) showed that in social science research there are five major research strategies that can be adopted for all three purposes – exploratory, descriptive and explanatory which are: experiment, survey, archival analysis, history, and case study. Moreover, he mentioned that there are three conditions for selecting each of these strategies, as shown in Table 4.4.

**Table 4.4 Relevant Situations for Different Strategies**

Strategy	Selecting Factors		
	Form of Research Question	Requires control of Behavioural Events	Focus on Contemporary Events
<b>Experiment</b>	How, Why?	Yes	Yes
<b>Survey</b>	Who, What, Where, How many, How much?	No	Yes
<b>Archival analysis</b>	Who, What, Where, How many, How much?	No	Yes/No
<b>History</b>	How, Why?	No	No
<b>Case study</b>	How, Why?	No	Yes

Source: Yin, (2009, p: 8)

#### 4.6.1 Case Study

According to Yin, (1994: P. 13), case study as a research strategy is “*an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident*”. Case studies have increasingly been used for social research, especially with small-scale research. Indeed, this widespread use of case study draws on the following rationale (Denscombe, 2003):

- **Spotlight on one instance (or a few instances):** One of the most important characteristics of the case study approach is its concentration on individual cases from which insights can be gained.
- **In depth study:** concentrating on just one instance can be a great opportunity to obtain more details to discover things that would not have become clear when the researcher investigates many cases.
- **Focus on relationship and processes:** Case study can be an appropriate method for investigating the relationships and processes, because it offers the opportunity of delving into sufficient detail to discover the complexities of these interactions.

Denscombe (2003: P. 53) commented: “*case studies tend to be holistic rather than deal with isolated factors*”. In case study, the attention should be given to exploring why certain outcomes might occur, more than simply revealing those outcomes. Consequently, in the present study, the researcher used a case study as an appropriate strategy to investigate the intricate interactions between marketing and operations groups.

- Natural setting: As mentioned by Yin, (1994), the case is a “naturally occurring” phenomenon. It is not generated solely for the purpose of the study. Therefore, case study strategy has been chosen for this study to examine the phenomenon of marketing and manufacturing integration in its real world in the Iraqi context.
- Multiple sources and multiple methods: In a case study, a variety of data collection methods can be used as a part of the investigation. For example, observation of events can be combined with the collection of documents for investigating relationships and processes (Denscombe, 2003). Therefore, the researcher selected case study strategy for this research to enable him to use multi resources of evidence involving conducting semi-structured interviews with different people and observing various factories and sales centres to gather data about the interactions between marketing and operations personnel.

As pointed out by Christie et al. (2000); Easton (2010); and Perry (1998), a case study should be adopted by the realist researcher to conduct the research when:

- There are particular events that are concentrated on a situation or context and have specificity (particularistic) (Eisenhardt, 1989). In this study, the researcher investigates marketing and operations interactions in a CFTs context.
- The social organisational settings are complex (Morgan & Smircich, 1980; Parkhe, 1993). In this research, the researcher investigated the complexities of marketing and operations interactions and relationships in the two case study organisations in the Iraqi context, through collecting and analysing their information.

- The researcher strives to understand the contextual meaning within a finite system (Bonoma, 1985; Stake, 1978; Yin, 1994). Through the present research, the researcher seeks to consider the meaning of marketing and operations interactions in a CFTs context within the textile industry sector in Iraq.
- The essential approach of the study to theory development is an inductive theory building, with some deduction to benefit from the prior theory (Perry, 1998; Sobh & Perry, 2006). Under a realism paradigm, the adopted approaches of this research are deductive to develop theoretical framework and propositions, and inductive to collect qualitative data for developing theory.

By adopting the case study strategy, the researcher will be able to gain deep understanding about the context of the research and processes being enacted (Saunders et al., 2009). Moreover, this strategy is appropriate for explanatory research because of its considerable ability to generate answers to the questions “why” and “how”. In addition, with this strategy, the researcher can employ various techniques to collect data that could be used in combination (Saunders et al., 2009; Yin, 2014). For example, in the present case study research, the researcher utilised interview and observation techniques as a triangulation to gather data.

According to the above discussion, the case study strategy is suitable for conducting this explanatory study to achieve a rich understanding about the marketing and operations interface in the Iraqi context through analysing the significant information in more detail.

#### **4.6.1.1 Selecting Case Study Organisations**

Yin, (2009) distinguished between single- and multiple-case studies in designing case studies. To use single case strategy, it should be one of the following cases:

- Critical case for confirming a well-formulated theory.
- Extreme or unique case.
- Inaccessible case to scientific investigation.



In addition, case study strategy may include multiple cases, an approach which has increased recently. By utilising multiple cases, the researcher can confirm whether the findings of the first case are replicated in other cases, thus these findings can be theoretically generalised (Saunders et al., 2009; Yin, 2014). As demonstrated by Yin (1994, p.45), multiple cases should be considered as one would consider studies following a "replication" logic. Therefore, the relevance here should be the criterion for case selection rather than representativeness (Sobh & Perry, 2006). In addition, Yin (2003) pointed out that multiple case studies may be preferable to a single case study, and he also argues that the researcher needs to have a strong justification for using a single case study. Moreover, the evidence from multiple cases can be more compelling, thus the overall study would be more robust (Yin, 1994). However, there is no specific guide to determine the number of cases to be included (Perry, 1998). As stated by Romano (1989, P. 36), cited in Perry (1998), *"the literature recommending the use of case studies rarely specifies how many cases should be developed. This decision is left to the researcher...."* But a more in-depth observation could be achieved if the number of adopted cases is small (Voss et al., 2002). Perry (1998) claimed that the range of case studies that can be accepted is between two to four as the minimum and ten, 12 or 15 as the maximum.

On the other hand, according to Dubois and Gadde (2002, P. 558), the argument for an abductive approach as mentioned in the research approach section, was that *"when the problem is directed toward analysis of a number of interdependent variables in complex structures the natural choice would be to go deeper into one case instead of increasing the number of cases"*. This is in line with many authors such as Dyer and Wilkins (1991); Peattie (2001); and Weick (2007), who demonstrated that the rich context and background of each case can be missed because of the too much focus and reliance of the replication logic on the constructs developed and their measurability. Therefore, they emphasized the need for better stories and better constructs through single-case studies, in which clarity is attained by the concentration on context and richer description of phenomenon and context (Dubois & Gadde, 2014).

According to Sobh and Perry (2006, P. 1203), one of the applications of the realism paradigm when designing case study research concerns the selection of cases, which is called replication. With this paradigm, replication means the *"choice of cases where the results are expected to be the same or different."* In other words, each case in a multiple case study should be carefully chosen so that it either (Yin, 2014):

- a) Predicts similar results (a literal replication), or
- b) Produces contrasting results but for predictable reasons (a theoretical replication)

In this regard, Yin (1994) recommends a mixture of literal and theoretical replications, which, if the outcomes of all cases are similar to the theoretical propositions, would provide compelling support for the theory. Therefore, a theoretical framework is essential for illustrating the conditions under which a particular phenomenon is likely to be found (a literal replication) as well as the conditions when it is not likely to be found (a theoretical replication). In this study, the theoretical framework and propositions were developed in Chapter 3. According to the theoretical framework, new cases can be generalised, and if some cases do not match the conceptual propositions, the theory should be modified. This view is supported by Hussey and Hussey, (1997), and they mentioned that the theory can be generalised when the cases are similar; but it must be modified if these cases do not work as proposed.

In addition, the decision about how many cases and how to choose these cases for the investigation plays an important role in achieving the purposes of the research. Generally, there are four grounds as a basis of suitability on which case study selection can be justified (Denscombe, 2010):

- Typical instance: commonly, a particular case can often be offered for selection if it is typical, i.e. similar in crucial respects with the others that might have been chosen. Therefore, its findings can be generalized. In the present study, the researcher chooses two textile organisations in the Iraqi public industry sector as typical cases which utilise CFTs.
- Extreme instance: this instance provides something of a contrast with the norm, in which a case is selected as being notably smaller or notably larger than usual, for instance choosing very small organisation for a case study. The aim of this is to see the impact of the size factor more easily than it would be in the average size.

- Test-site for theory: selecting a particular case may depend on the relevance of the case for previous theory, as stressed by Yin (1994). In addition, the use of case studies can be for testing a theory as well as building a theory. The reason for selecting a specific case is the especially significant elements of this case in order to predict certain outcomes.
- Least likely instance: selecting a case might be for testing the validity of a theory through seeing whether it holds true in an instance where it might be least expected to. This can be evidence to support the theory although the least likely conditions to be more credible.

According to the above arguments, the researcher chose two Iraqi public textile organisations as typical instances which are similar with others in the Iraqi industry sector that utilise CFTs. In addition, the two case study organisations were chosen for this research project to be studied in greater depth, by which the validity can be promoted to produce strong evidence (Denscombe, 2003). Therefore, they would be adequate to meet the objectives of the present research.

**The justifications for choosing these particular cases are summarised as follows:**

- 1- The two case study organisations are public organisations, because the focus of this study is on the public industry sector.
- 2- The two case study organisations are two of the oldest and largest manufacturing organisations in the Iraqi public industry sector.
- 3- The two manufacturing companies are seeking to develop their marketing and operations capabilities in order to improve customer service to be able to survive and grow in the market.
- 4- The Iraqi industry ministry and top management of the two companies encourage the researchers to improve the performance of these organisations through conducting development studies (University of Technology in Iraq, 2013).

- 5- The importance and sensitivity of time in the production systems of the two companies due to the large number of their sequential processes which are time-consuming (Slack et al., 2013).
- 6- Both organisations are located within the southern and middle region of Iraq where access is safe and easy for the researcher.

#### **4.7 Data Collection Method**

Research data can be collected in different ways according to how it is used. If the method is utilised to collect data for measuring variables, this is a quantitative method, while a qualitative method is adopted to collect data about the meanings of phenomenon (Collis & Hussey, 2003). Qualitative research deals with qualitative information (i.e. words and sentences), while quantitative research depends on quantitative information (i.e. numbers and figures) (Blumberg et al., 2014). Qualitative methods can be used to collect qualitative data for this study under realism (Healy & Perry, 2000; Sobh & Perry, 2006). Qualitative data may be primary data, which refers to the collection of data by interviews, participant observation, direct observation and focus groups; while secondary data already exists for some other purposes, for instance, archival records, documentation and annual reports (Collis & Hussey, 2003; Saunders et al., 2009).

As illustrated by Yin, (2014), there are six different sources from which researchers can collect evidence for the case study:

- Interviews: one of the most important sources of evidence for case study is the interview (Yin, 2014). As pointed out by Denscombe, (2010, P.184), research interviews are a method of data collection by which people's answers to researchers' questions can be utilised as a resource of data. Therefore, the focus during the interviews is on "*what people say they do, what they say they believe, what opinions they say they have.*"

- Documentation: utilising documents plays an essential role in supporting the evidence from other sources, because the researcher can obtain specific details from documents, which helps in making inferences. Documents may include letters, memoranda, agendas, progress reports, and newspaper articles or any document related to the case study (Yin, 2014).
- Archival records: These can include service records, organisational records, maps and charts, list of names, personal records and other such records. The researcher can use these archival records with other sources of information for making a case study. Most of these records were produced specifically for other purposes and audiences (Yin, 2014).
- Physical artefacts: This source of evidence involves a technological device, a tool, instrument and some other physical evidence, which may be gathered or observed as part of a case study (Yin, 2014).
- Participant observation: As stated by Dewalt and Dewalt, (2010), Participant observation is one of the qualitative methods in which a researcher takes part in the daily interactions and events of a group of people in order to understand the natural and contextual setting of phenomena in the field.
- Direct observation: This is one of the evidence sources that can be used for gathering qualitative data to support the information of other sources. In order to conduct direct observation, researchers need to make a field visit to the case study "site" (Yin, 2003).

As demonstrated by Yin (2003), each of these data collection methods has different strengths and weaknesses, as shown in Table 4.5. In addition, the researcher should note that there is no single evidence source that has a clear advantage over all the others. Therefore, the real meaning of the phenomenon being studied can only be clarified when using multiple sources of evidence. Consequently, for this project, the researcher should consider all of these data sources and choose the most appropriate ones. Consequently, the researcher decided to utilise the interview and direct observation as resources of primary information for this study. In addition, the researcher was not able to collect secondary qualitative data from the available documentation and archival records because it was limited and difficult to access.

Participant observation was not appropriate for this project, because the researcher was not involved in the activities within the two case study companies (A and B). Physical artefacts were not suitable as an evidence source because this research concentrates on investigating the integration between marketing and operations functions.

**Table 4.5 Six sources of evidence: strengths and weaknesses**

Source	Strengths	Weaknesses
<b>Documentation</b>	Stable – can be reviewed repeatedly. Unobtrusive – not created as a result of the case study. Exact – contains exact names, references and details of an event. Broad coverage – long span of time, many events and many settings.	Irretrievability – can be low Biased selectivity if collection is incomplete. Reporting bias – reflects (unknown) bias of authors. Access – may be deliberately blocked.
<b>Archival records</b>	(Same as above for documentation). Precise and quantitative.	(Same as above for documentation). Accessibility due to privacy reasons.
<b>Interviews</b>	Targeted – focuses directly on case study topic. Insightful – provides perceived casual inferences.	Bias due to poorly constructed questions. Response bias. Inaccuracies due to poor recall. Reflexivity – interviewee gives what interviewer wants to hear.
<b>Direct observation</b>	Reality – covers events in real time. Contextual – covers context of event.	Time – consuming. Selectivity – unless broad coverage. Reflexivity – event may proceed differently because it is being observed. Cost – hours needed by human observer.
<b>Participant observation</b>	(Same as above for direct observations). Insightful into interpersonal behaviour and motives.	(Same as above for direct observations). Bias due to investigator's manipulation of events.
<b>Physical Artefacts</b>	Insightful into cultural features. Insightful into technical operations.	Selectivity. Availability.

Source: Yin (2003, p: 86)

### **4.7.1 Interviews**

Collis and Hussey (2009) pointed out that the interview is a data collection method in which specific participants are asked questions in order to discover what they do, think or feel. In this method, the interviewer can compare answers and the interview can be face-to-face, voice-to-voice or screen-to-screen; conducted with individuals or a group of individuals. By using interviews, researchers are able to collect valid and reliable data which are relevant to research questions and objectives (Saunders et al., 2009).

As reported by Yin (2003), interviews are one of the most significant ways for case study evidence by which an interviewer can understand others when considering the meanings through their perceptions regarding what they feel and believe. The function of interviews, which deal with human issues, is more like guiding conversations rather than structuring queries (Yin, 2014). Collis and Hussey (2003) added that conducting interviews may be problematic because the whole process can be very time consuming and expensive. Moreover, the researcher must ensure that he/she conducts all the interviews in the same way. According to Saunders et al. (2009), interviews can be categorised into three types: structured interviews, semi-structured interviews, and unstructured or in-depth interviews.

#### **4.7.1.1 Semi-Structured Interview**

As mentioned by Bryman and Bell (2011: P. 467), *“the researcher has a list of questions on fairly specific topics to be covered, often referred to as an interview guide, but the interviewee has a great deal of leeway in how to reply”*. Semi-structured interviews may lead to unexpected information through interviewee answers that can be useful for study (Saunders et al., 2009). It can be argued that unstructured interviews or semi-structured interviews are concerned with exploring data on understanding, opinions, what individuals remember doing and feelings. The questions in this kind of interview are probably open-ended, with probes to obtain more details from the interviewee’s answers. In order to gain more information while conducting this kind of interview, the researcher needs to probe the interviewee to establish sequences of events or gather details. Moreover, by using probes, the interviewer can gain a richer understanding about the issues being studied, which helps in analysing data (Collis & Hussey, 2009).

Collis and Hussey, (2003) illustrated that semi-structured interviews are an appropriate method when:

- It is necessary to understand the construct that the interviewee uses as a basis for his or her opinions about a particular situation.
- One aim of the interview is to improve an understanding about the respondent's "world" so that the researcher might influence it.
- The step-by-step logic of a situation is not clear.
- The subject matter is highly confidential or commercially sensitive.
- The interviewee may be reluctant to be truthful about a specific situation.

Semi-structured interviews are more frequently used as a data collection method for the explanatory study in order to understand the relationships between variables and concepts (Collis and Hussey, 2009; Blumberg et al., 2014). Therefore, the researcher needs to conduct these qualitative interviews where it is necessary to understand the reasons for the decisions that research subjects have taken, or to understand the reasons for their opinions. In addition, many researchers have demonstrated that managers are probably better interviewed rather than filling in a questionnaire, in particular where the interview topic is interesting for them and relevant to their current work (Collis and Hussey, 2009). For these reasons, the researcher adopted semi-structured interviews to gather the information from the research subjects within the case study organisations. As Denscombe (2014: P. 202) stated, "*The data from interviews are based on what people say rather than what they do*". The difference between the two can negatively impact the validity of this data. Therefore, the researcher conducted interviews with different subjects and adopted direct observation for triangulation. Moreover, the reliability of an interview can be negatively influenced due to the interviewer bias through the comments, tone, and the way in which the interviewer questions the interviewees and interprets responses. Consequently, the researcher should consider this point when carrying out interviews and interpreting answers (Denscombe, 2010). Furthermore, the bias of interviewers may lead to invalid data. Therefore, the interviewer needs to use open-ended questions and to probe interviewees in order to avoid this bias (Saunders et al., 2009). Semi-structured interviews are time-consuming when transcribing and coding interview data. In this research, the interviewer overcame this problem through transcribing the recordings of interviews after collecting them on the same day (Denscombe, 2010).



#### **4.7.1.1.1 Selecting the Interviewees for the Interview**

In order to investigate the integration between marketing and operations functions empirically within the context of CFTs, the researcher decided to conduct the semi-structured interview face-to-face with the managers of marketing, operations, and R&D departments of the seven factories in the two case study organisations. The reason for this choice was because these people represent the main members of CFTs, and they have an education and developed experience regarding their daily interactions and work conditions. Furthermore, most of them have worked in their departments for a long period and thus their perceptions about the relevant issues of this study could be rich and deep. Therefore, the two case study organisations rely on these members to make their strategic plans and decisions regarding new product development, market demand, and marketing and operations capabilities, which are relevant to this study. In order to select participants, initially, the researcher made his contacts with them by phone when he gained the permission from the top management of the two organisations and the senior managers of their factories to carry out the interview. According to these contacts, the researcher met them face-to-face and gave them an explanation about his project and its purpose. In addition, the researcher provided a participant invitation letter (Appendix 4), participant information sheet (Appendix 5), and participant consent form (Appendix 6) for these people, and asked them to read and sign it if they allow him to conduct the interview with them. At the end of these meetings, they signed the aforementioned letter and form. Furthermore, the researcher noted that these participants strive to improve the performance of their departments according to the development programme of the Iraqi industry ministry. Therefore, they were collaborative with the researcher when he asked them to be research participants. As a result, it was easy to gain access to these participants to provide relevant and sensitive data. The researcher continued conducting interviews until the twenty-first participants had been interviewed. It was at this point that the researcher judged "theoretical saturation" to have been reached (Corbin & Strauss, 2008).

#### **4.7.2 Direct Observation**

As Vogt (1993: p. 150), cited in Collis and Hussey (2009), pointed out, “*Observation can take place in a laboratory setting or a natural setting. A natural setting is a research environment that would have existed had researchers never studied it*”. Due to the importance of context and its impact on the phenomenon under study, a natural setting is appropriate for the research project where a realist paradigm is adopted (Sobh & Perry, 2006). Moreover, the relevant issues and themes of the actions and events being observed will emerge during the analysis process (Collis and Hussey, 2009). In addition, the researcher needs to develop an observational protocol to be able to evaluate some relevant behaviour during certain periods of time in the field, such as observations of meetings. Furthermore, with observations, the researcher can make a direct observation through a field visit to observe, for instance, the work conditions. In addition, the observations may be valuable through taking photographs at the case study site (Yin, 2003). Furthermore, the use of photographs with other sources of evidence helps (Bryman & Bell, 2011);

- To improve a richer understanding of organisational operations;
- To capture data that cannot be revealed in interview;
- To disclose to personnel aspects of work in other parts of the company with which they have little or irregular contact;
- To support respondent validation of data; and
- To involve staff in discussion of the research implications for redesigning and developing organisation process.

Saunders et al. (2009) observed that if the research questions and objectives are related to what individuals do, the researcher will need to watch them do it. For example, while interviewing the participants in the two case study organisations, some of them stated that adopting advanced technology plays an essential role in achieving the integration between marketing and operations functions. But the interviewer observed that during his visits to their factories, there was some use of old machines in the production lines of these plants. Hence, through conducting direct observation, the data collected by interviews can be supported. Therefore, the essential means for that is observation, which includes observation, recording, description, analysis and interpretation of people’s behaviour (Saunders et al.,

2009). In addition, the experience and knowledge of the research participant can be confirmed by direct observation to become more powerful with empirical evidence (Jorgensen, 1989). According to the above discussion and reasons, direct observation is appropriate for this study in order to collect data on CFTs applications and work conditions within the marketing and operations environment in the two case study organisations. Moreover, through observing the factories and sales centres of these firms, the researcher revealed to what extent the use of CFTs by case study organisations can contribute to developing their delivery performance.

As mentioned by Denscombe (2014: P. 212), observation as a method of data collection concentrates on “overt behaviour and manifest events”. Consequently, it simply provides a description of what occurs, and it is not concerned with reasons beyond this behaviour and events. Therefore, the researcher made explanations regarding what he observed. In addition, the validity and reliability of data collected through observation can be influenced by the interviewer. This is because the behaviour of subjects may be changed when they recognise that they are observed. In this study, the researcher as non-participant observer overcame this impact through his minimal interaction with the subjects of the observation (Saunders et al., 2009). In addition, the data from observations can be slow and expensive to gather; but in this research, the observer was able to complete the observation during the limited period due to his experience in the textile industry and the helpfulness of subjects. Furthermore, the cost of observation was low because the two case study organisations were geographically accessible to the researcher (Saunders et al., 2009).

#### **4.8 Triangulation**

Easterby-Smith et al. (2004) illustrated that with social research, there are four distinct types of triangulation:

- Theoretical triangulation, where a theory is borrowed from a certain discipline (for instance, operations) and utilised to explain a phenomenon in another discipline (for example, marketing).
- Data triangulation, where data is gathered from various sources or at different times to investigate a phenomenon. In the present study, data was triangulated through adopting two data collection methods: interview and direct observation.

- Investigator triangulation, where data on the same phenomenon can be collected by different researchers independently to compare results.
- Methodological triangulation, where both quantitative and qualitative methods of data collection are used.

As Saunders et al. (2009) reported, the researcher is likely to need to use and triangulate multiple sources of data if he/she adopts a case study strategy. Triangulation is the use of two or more sources of evidence or data collection methods by which the researcher can ensure that the collected data tell him/her the same story. According to Denscombe (2003), the researcher should be encouraged to:

- Use multi-methods to investigate a topic.
- Recognise the value of utilising multi-methods to promote findings in order to enhance the validity of data.

According to Perry et al. (1997, P. 554), *"a perception for realists is a window on to reality from which a picture of reality can be triangulated with other perceptions"*. In other words, under realism paradigm, data could be triangulated through the perceptions of different people which identify the reality of phenomenon. These perceptions should reflect the same reality when answering the same questions (Christie et al., 2000; Perry et al., 1997; Sobh and Perry, 2006). Consequently, for data triangulation, the researcher collected qualitative data through using different methods, namely semi-structured interview and direct observation. The reason for this adoption is to support the validity of interviewees' responses in a natural and contextual manner. Furthermore, by conducting semi-structured interviews with different respondents, this research investigates marketing and operations integration through realism's triangulation of perceptions.

#### **4.9 Ethical Approval**

Saunders et al. (2009) mentioned that social researchers should be ethical when they plan and conduct activities involving collecting, analysing, and reporting data. In addition, in the context of research, the behaviour of the researcher should be appropriate to the rights of those who become the subject of research, or are influenced by it. Cooper and Schindler, (2008: p. 34), cited in Saunders et al. (2009: p. 184), referred to ethics as the "norms or standards of behavior that guide moral choices about our behavior and relationships with others". According to the instructions of Salford University, the researcher applied for ethical approval to collect data from the two case study organizations. The Research Governance and Ethics Committee (RGEN) granted the researcher the ethical approval to conduct the field study (Appendix 7). With the permission of the top management of the two case study organizations, the researcher made contact with participants in these companies in order to obtain their approval to be research subjects. Furthermore, during the meetings with these people, the researcher informed the interviewees about the purpose of the study, and they could withdraw at any time without having to give a reason. These participants were also informed that any gathered information would be under the condition of anonymity and their identities and records would be maintained as confidential, as stated in the participant invitation letter, participant information sheet, and participant consent form. Furthermore, the participation of these people was voluntary, and there was no any coercion used to force them to take part in the research. In this respect, they read and signed the participant consent form, and offered consent before conducting interviews.

In addition, the researcher asked marketing, operations, and factory managers to allow him to observe sales centres and factories respectively, after explaining its importance to the study. Furthermore, he informed them that the information of observation will be treated securely. In addition, the published results will keep the names anonymous, and the observation can be stopped at any time, if it is not possible, as stated in the consent form of observation (Appendix 8). In this regard, these managers read and signed the consent form of observation. After obtaining permission from the respondents, arrangements for conducting the interviews and observations were made in terms of the time and place, taking into account their commitments.

As promised, anonymity has been given to participants; the researcher was aware that these important ethical issues should be maintained. Therefore, the raw data collected (i.e. audio recordings, verbatim transcripts) remained confidential, particularly in terms of names and other personal information. In relation to the anonymity, “*ways of ensuring anonymity are inevitably research method specific*” (Saunders et al., 2009: p. 194). Therefore, during the course of the interview, the researcher was careful to hide the responses of others to each interviewee. Furthermore, he employed the ‘Chinese wall’ technique as an information barrier within a company to prevent respondents from communicating or sharing information, through carrying out the interviews separately and respectively with them of each factory at the same day and in different places (Jun et al., 2012). As mentioned by Easterby-Smith; Thorpe; and Jackson (2008), one of the particular ethical issues on which frequently organisational researchers focus is related to the use of the observation methods for collecting data. With these methods, it is difficult to avoid some deception regarding the real purpose of your research. In this research, due to the great need to develop the performance of the two case study organisations, the researcher has provided a reasonable explanation regarding the real purposes of his research for the informants who wished to improve the competitiveness of their companies through such study. Therefore, they were very collaborative to take part into the research. For example, the senior managers allowed the researcher to use a camera when he observed the factories and sales centres.

#### **4.10 Criteria to Judge the Quality of Case Study Research**

Validity and reliability represent the two central issues for establishing the quality of any empirical social research such as a case study (Silverman, 2011; Yin, 2014). According to Collis and Hussey (2009: P. 64), validity is “*the extent to which the research findings accurately reflect the phenomena under study*”. In the qualitative research, the focus is on how to obtain rich detailed information about the phenomenon being studied in order to understand the meanings behind its complexities, thereby the validity will be high. In terms of reliability, as demonstrated by Bryman (2012, p.30), the “reliability is concerned with the question of whether the result of the study is reputable”. Furthermore, the findings of a research could be reliable when repeating this research leads to the same findings.

Consequently, the main focus of reliability is on the stability and consistency of measurements, while validity is concerned with measuring the right concept (Cavana et al., 2001). As pointed out by Riege, realists share positivists' aim, which is to explain and predict social phenomena. However, a realist approach is often more appropriate to investigate phenomena and triangulate people's perceptions when these phenomena are not wholly discoverable or knowable. Nevertheless, it can be argued that qualitative research such as a case study is still an unacceptable alternative to rigorously establishing quantitative methods in marketing research. Under the realism paradigm, the main focus is on "*the rigorously analytical method of case study research*" (Riege, 2003: P. 75). Commonly, there are four tests, summarised in Table 3.5, that have been utilised to establish the quality of case study research in terms of validity and reliability (Yin, 2003):

❖ **Construct Validity:** this test can be problematic in case study research if the researcher does not develop appropriate operational measures for the theoretical concepts being investigated (Riege, 2003). In case study research, construct validity can be attained when developing the construct of this case by a literature review, triangulation, and/or reviewing a draft of the case study report by informants (Christie et al., 2000). Therefore, in this study, in order to increase construct validity, the researcher adopted the following three tactics (Yin, 2003):

- 1) Using multiple sources of evidence, namely semi-structured face-to-face interviews, as the main source of data, and direct observation as convergent lines of this empirical investigation.
- 2) Establishing a chain of evidence which is relevant during data collection through interviewing 21 respondents from different departments: marketing, operations, and R&D.
- 3) Reviewing the drafts of interview' notes by the key informants.

- ❖ **Internal Validity:** as Yin (2003) stated, this test is for explanatory or causal studies only, in which the investigator should be accurate when he / she is trying to determine the causal relationships between events. In qualitative research, a phenomenon can be established credibly in generative mechanisms or causal powers (Tsoukas, 1989). In addition, for case study research, the concern is strongly with making inferences about real-life experiences when identifying the generative mechanisms (Christie et al., 2000). There are three specific tactics suggested by Yin for achieving internal validity, pattern-matching, explanation-building, and time-series analysis (Yin, 2003). Consequently, in this research, the explanation-building tactic was used for analysing the data collected in order to achieve internal validity.
  
- ❖ **External Validity:** this test represents the extent to which a researcher's findings can be generalised beyond the immediate case study (Yin, 2003). In case studies, the analytical generalisation represents a means of attaining external validity by which particular findings can be generalised to some broader theory (Perry et al., 1997; Riege, 2003; Yin, 2003). Yin (1994, p. 36) illustrated that *"the external validity problem has been a major barrier in doing case studies"*. He suggested two tactics, as set out in Table 3.5, to overcome this problem through using replication logic in multiple-case studies (Yin, 1994). In this study, two manufacturing organisations and twenty one participants were chosen to achieve an analytical generalisation.
  
- ❖ **Reliability:** for this final test, the emphasis is on doing the same case study over again, and following the same procedures as described by an earlier investigator in order to obtain the same findings and conclusions. As stated by Yin, the aim of reliability is *"to minimize the errors and biases in a study"* (Yin, 1994, p. 36). Clearly, this requires documenting the procedures which were followed in the earlier case. Therefore, through such documentation, an investigator is able to deal with reliability. In this respect, there are two tactics for attaining reliability, both of which were used during the data collection as shown in Table 4.6, which involved utilising a case study protocol and developing a case study database (Yin, 2003). In this research, interview protocol (Appendix 9), and observation protocol (Appendix 10) were developed, and



transcription of interviews and summary of notes were read and signed by the interviewees, thus increasing reliability.

**Table 4.6 Case study Tactics for Four Design Tests**

Tests Tests	Case Case study tactic ic	Phase of research in which tactic used used
<b>Construct validity</b>	-using multiple sources of evidence involving interview and observation. -establishing a chain of evidence from the interviews with participants from different functions in the two case study organisations.	data collection  composition
<b>Internal validity</b>	-doing pattern-matching. -doing explanation-building.	data analysis data analysis
<b>External validity</b>	-using replication logic in multiple-case studies. -	Research design
<b>Reliability</b>	-using a case study protocol. -developing interview protocol and observation protocol.	data collection data collection

Source: Adapted from Yin (1994, p: 33)

#### 4.11 Conducting the Real Case Study

In order to conduct the actual case studies, the researcher normally develops a protocol to guide him in carrying out this research project in the field. A case study protocol is more than an instrument; it also consists of the procedures and general rules that should be followed by the researcher in utilising the instrument. In addition, this protocol is essential when adopting a multiple case design so that the reliability of the cases under research can be increased (Yin, 1994). According to Yin, (1994), the case study protocol should include the following elements:

- ❖ **Overview of the case study project** (a letter of task facilitating and participant information sheet, as a summary of the study were sent from the University of Kufa in Iraq to the top management of the two case study organisations). These letters and

summaries were in Arabic, as the official language and the mother tongue in Iraq. The letter of task facilitating was translated in English (Appendix 11).

- ❖ **Field procedures** (data collection procedures such as making a clear schedule of the data collection activities, ways of contacting respondents and gaining trust from them) (As given in the next subsections).
- ❖ **Case study questions** (in this study, the researcher concentrates on the link between substantive questions and the actual inquiry in order to keep him on track as data collection proceeds. Therefore, for each question, the researcher prepared a list of probable sources of evidence including the names of individual interviewees and observations to help him in collecting the data).
- ❖ **A guide for the case study report** (the case study procedure is outlined according to the stages of the design of this case from identifying the research problem to the conclusion and recommendation for the case study report) (Appendix 12).

#### **4.11.1 Pilot Case Study**

As Yin (2014) indicated, a pilot case study is the initial case study that can be used by the researcher to refine his/her data collection plans in terms of questions and the procedures to be followed in the formal case study. In general, the pilot case or cases can be selected through criteria which include convenience, access and geographical proximity (Yin 2003). In this research, the researcher conducted a pilot case study with six members of cross-functional teams including marketing, operations, and R&D managers from Case A (Public textile organisation in Hilla). The reason for this application was to determine whether the questions were understandable to the interviewees and sufficiently comprehensive to meet all of the research objectives, and also to reveal any potential problems that might occur when the researcher observed the site of this case in order to make modifications as required. Two factories from Case Study A were selected for the pilot case involving a men's garments plant in Najaf and Dewania textile factory because of its geographical proximity to the researcher. After interviewing participants in this case, the researcher asked them to provide their opinions about the structure and questions of the interview. All of the interviewees stated that

the interview questions were understandable and they found no problems with the procedures of the interview. In addition, the researcher did not face any difficulty when observing the plants and sales centre of this case. However, some respondents were not sufficiently relaxed to allow the researcher to tape-record their answers to interview questions seven, eight, and nine regarding the potential problems that may occur when using CFTs. Therefore, to allow them greater freedom of speech, there was a pre-agreement with all interviewees that the researcher would stop the recorder and take notes of what transpired about these questions when they ask him to do so (Blumberg et al., 2014).

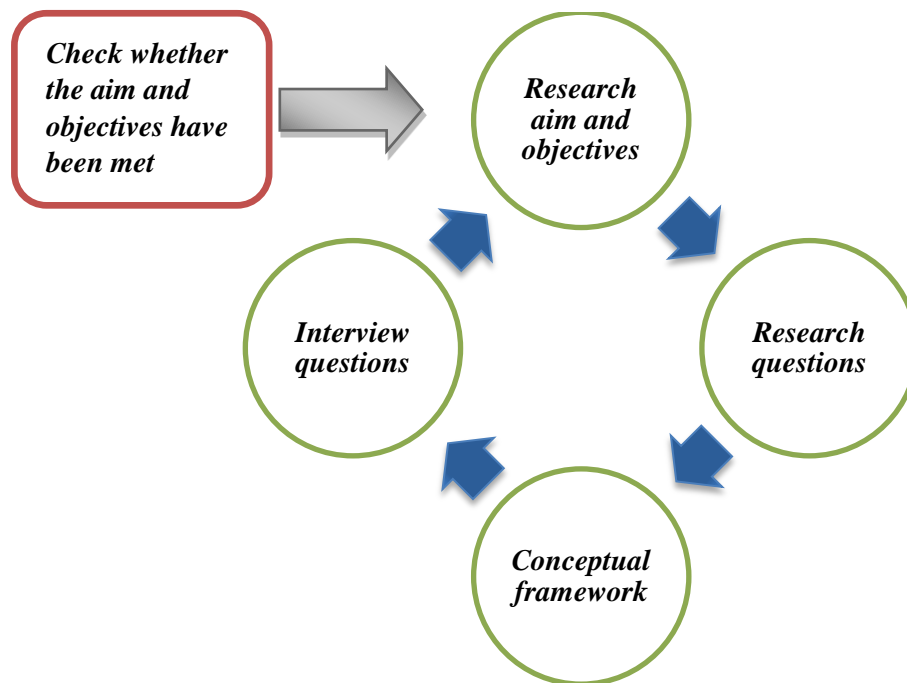
#### **4.11.2 Collecting data through Interview**

As a guide for the interviewer, there are two dimensions for evaluating each interview question, including a thematic dimension which concerns its relevance to the research themes, and a dynamic dimension that relates to the interpersonal relationship in the interview (Steinar, 1996). In this research, there are two phases of the interview involving the structure of the interview which relates to the theoretical framework, as well as the interview process that concerns the interviewees.

##### **4.11.2.1 The Structure of Interview**

In this study, the researcher developed a conceptual framework according to the literature review to be used as a guideline in the field. Therefore, based on the structure and content of this framework, the interview questions are divided into four phases: the need, method, development, and achievement. Furthermore, collecting data of these phases by interview will help the researcher to answer research questions as stated in the theoretical statement (Appendix 13). In this project, the researcher concentrates on the link between the research aim and objectives, research questions, conceptual framework, and interview questions, as listed in Figure 4.2. Therefore, achieving the research aim and objective depends on the way in which these interview questions will be answered.

**Figure 4.2 The linkage between research aim, research questions, conceptual framework, and interview questions**



#### **4.11.2.2 Interview Process**

In this process, semi-structured interviews formed the key method of collecting data about understanding, opinions, what respondents remember doing, attitudes, and feelings regarding the interactions between marketing and operations groups. Therefore, the researcher conducted the interviews face-to-face with marketing, operations, and R&D managers as the main members of CFTs which are utilised by the factories of the two case study organisations. The reason for selecting these interviewees was their ability to provide valuable information about the themes of this investigation, due to their education and developed experience as regards their daily interactions in the context of CFTs. The researcher carried out the interviews in all of the plants of the two case study organisations because he dealt with each organisation as a holistic case (Denscombe, 2003). The number of interviewees was 12 in case study organisation A, and 9 in organisation B, as shown in Table 4.7.

**Table 4.7 Individuals interviewed in the case study organisations**

Case study	Factories of case study	Number of interviewees	Kind of industry
Case study A	F1	3	Sewing
	F2	3	textile
	F3	3	
	F4	3	
Case study B	F5	3	
	F6	3	
	F7	3	Knitting

Due to the importance of obtaining trust in conducting qualitative interviews (Easterby-Smith et al., 2002), the researcher submitted a letter from his supervisor and his university in Iraq to develop an initial relationship with the two case study organisations. To obtain permission from those managers to be involved in the sample, the researcher contacted them by phone and then face-to-face through the R&D department in each factory under study, when the top management of each organisation allowed him to conduct the research in its plants. The researcher noticed that they were enthusiastic about being interviewed when he provided them with a reasonable explanation about the purpose of this project. This was because they were striving to develop the performance of their departments and functional objectives in accordance with the instructions of their top management. Therefore, they were collaborative and responsive during the interview. In addition, the researcher conducted the interview with managers from different departments, namely marketing, operations, and R&D in order to triangulate the subjects for diverse views (Myers, 2013). The interviews took place over the period of November 2014. Furthermore, the average time that was spent on each interview was approximately one and half hours taking into account the commitments of the interviewees. The demographic data concerning the interviewees is shown in Appendix 14.

A sample of the interview questions that were developed according to the research questions emerging from the literature review as a guide for the interviewer was an essential part of the qualitative interview. Therefore, the researcher ensured that the same issues under study were addressed in all of the interviews. The interview questions dealt with all important themes of the study, and they were well-ordered. In order to decrease the influence of the interviewer on the interviewees, the researcher avoided leading questions. Moreover, the researcher used open-ended questions that may reduce bias (Cameron & Price, 2009; Easterby-Smith et al., 2008) and probed the interviewees to be able to explore and gather maximum detailed information (Collis & Hussey, 2009).

In addition, the interview sessions were arranged in advance, taking into account the convenience of time and place for respondents. Furthermore, the structure and procedures of interview were well organised. Interviewees' names were kept confidential and their actual names were replaced immediately with codes when conducting the interview as agreed by the respondents themselves (See list of symbols denoting research subjects, P. XIV). In addition, the interview schedule was made for the convenience of the respondents, who preferred to be interviewed in the early morning or in the late afternoon to be able to focus on the issues discussed and avoid distraction. As a result of these activities, the interview was well prepared, and thus this careful preparation contributed to conducting interviews successfully (Saunders et al., 2009).

The interviews were conducted in Arabic (the mother language of the interviewees and the interviewer), and tape recorded with the permission of respondents. In addition, the interviews were smoothly carried out due to the use of follow-up questions such as "Can you explain this with an example?" (Blumberg et al., 2014) Through conducting the interviews, the researcher took notes about the important issues to be able to test his understanding about each interviewee's answers at regular times to ensure an accurate record by questioning the interviewee, for instance, "Can I check that I've understood your answer fully?" This test is important to gain valid data (Cameron & Price, 2009). In addition, the interviewer transcribed the recording of the interviews, and summarised the notes that have taken during the interviews. This transcription of interviews and summary of notes have been read and signed by the interviewees, thus increasing reliability (Yin, 2003). As a result of the above advantages, the researcher was able to develop a sufficient level of competence to conduct interviews, and collect rich and detailed data about the main issues of the study.

#### **4.11.2.3 Developing and Translating the Interview Protocol**

The main purpose of the interview protocol is to help the researcher to follow his own line of inquiry when conducting interviews and to remind him of the required information for collecting (Yin, 2014). In order to guide the researcher and to keep him on track when carrying out the interview, an interview protocol has been developed according to the relevant concepts of study emerging from the literature to be an appropriate instrument for research objectives. Furthermore, a sample of interview questions that were improved in line with the research questions after reviewing the relevant literature was listed in this protocol. The researcher made some modifications in the draft of the interview protocol in accordance with the feedback from his supervisors and some PhD students in order to enhance the validity of issues. The interview protocol form begins with the demographical information regarding the interviewees: name, gender, qualifications, position, years of service and years in this position. After that, there are number of open ended questions such as “How do marketing and operations work together in developing a new product?” And “How do you view the relationship between members of CFTs in your organisation?”. This kind of questions can contribute to revealing unexpected issues that may be related to the study and thus achieve a deep understanding about the interactions among marketing and operations functions. The interview protocol of this study was written initially in English. However, because the present study was undertaken with Iraqi organisations, in which the official language is Arabic, the researcher and some professionals who spoke English and Arabic translated all interview questions into Arabic. After carrying out the interviews in Arabic, all questions were back translated into English to be checked for accuracy, and then the transcripts of the interviews were translated into English.

#### **4.11.3 Collecting Data through Direct Observation**

In order to support the collected information from the interviews, it is best to observe what actually occurs instead of merely relying on what participants say they do, or what they say they think (Denscombe, 2010). In the two case study organisations, the researcher used the direct observation technique to observe and describe the real situation of the interactions between marketing and operations groups in the context of CFTs applications. However, the researcher as structured observer did not participate in what was going on in this natural setting (Bryman & Bell, 2011). For the structured observation, the researcher identified what

he should directly observe and record, relying on the relevant themes of study emerged from literature review. In other words, the events under observation were implemented impartially (Yin, 2003). As in other data collection methods, the observer obtained permission from the subjects to carry out the observation. In order to conduct an effective observation, the researcher adopted a systematic approach to enter the field as follows (McCall & Simmons, 1969):

- I) Generally, the contacts of the observer moved from the senior managers down to the actual participants in the field.
- II) The researcher provided a reasonable explanation about the research in order to make sense to those participants in the field to be collaborated.
- III) The observer presented himself as honestly as possible to the research subjects in order to gain their trust and their acceptance for further research.
- IV) To have an acceptable reason for contacting people, the observer had in mind some rather routine fact-collecting that would make sense to those in the field.

Before conducting the observation, the researcher made initial visits to the sales centres and factories of the two case study companies with their managers in order to familiarise himself. The researcher developed the observation protocol by which the observational instruments had been improved (Yin, 2014). In this respect, the researcher made arrangements with the managers regarding the time, place, and location of observation. Furthermore, issues of observation were listed as a guide to conduct the observation in order to address all of the relevant topics as set out in the observation protocol. In order to achieve the research objective “*To investigate the delivery performance of Iraqi public textile manufacturing organisations which utilize CFTs*”, the researcher observed six themes that emerged from the literature. These themes related to CFTs decisions regarding production lines and customer orders, as shown in Appendix 15.



Subject to the permission of managers, the researcher was free to change places and the focus of the observation to explore any unexpected events when they happened. In order to make reliable records, the researcher took direct notes as immediately as possible and with the greatest possible detail to be rich full notes. Moreover, he used a camera to gather valuable information (DeWalt & DeWalt, 2010; Yin, 2014). For describing and interpreting each observation, the researcher developed a field study observation form as shown in Appendix 16 (DeWalt & DeWalt, 2010). Furthermore, information about time, date, and place of observations was also presented within this form, to be used as a permanent record (Denscombe, 2010). In addition, observations were described and interpreted in more detail by the researcher, and their forms were ordered and kept in a record according to the factories and sales centres observed. In order to avoid the selectivity, the researcher made a broad survey of the factories and sale centres under study when he conducted the observations, thus ensuring valid information (Blumberg et al., 2014). As a result of the above activities, the observation was conducted in a smooth way, and in the natural setting and real context of events avoiding the subject error, time error, and observer effect, thus increasing the validity and reliability of data. In this respect, subjects were selected for observation who in as many respects as possible were typical. Furthermore, observations were carried out when employees were engaged in typical tasks. In addition, during the observations, there was not any substantive effect of observer on this process, and the description and interpretation of observations were supported by the photos thereby reduced bias (Saunders et al., 2009).

#### **4.12 Qualitative Data Analysis**

In realism research, a huge amount of qualitative data about meanings can be generated from field notes as a result of using different sources such as interviews, direct observation, etc. (Collis & Hussey, 2003; Sobh & Perry, 2006). However, the nature of qualitative data is highly complex (Easterby-Smith et al., 2002). To analyse this data, the researcher needs to condense raw data by adopting a systematic way in which data can be summarised and manageable that usually includes some form of coding (Collis & Hussey, 2003). Therefore, the researcher needs to prepare and organise data for analysis to be useful and the meanings understood (Saunders et al., 2009). So in general, the researcher followed a number of analytical procedures, which were derived from the literature as follows:

- 1) Keeping all of the transcriptions of interviews and summary of notes which were read and signed by the interviewees in a specific record.
- 2) Filing all of the original materials and consent forms in a safe place.
- 3) Making back-up copies of all original materials to be protected and using these copies during the analysis process to avoid any loss or damage.
- 4) Identifying the pieces of raw data with specific serial numbers by which he could return to any point in the data easily for analysis (Denscombe, 2010).
- 5) Keeping all of the written forms of interviews and observations data in specific separated records to avoid losing data and to prepare it for analysis (Saunders et al., 2009).
- 6) Making copies of computer files and photocopies of any visual images.
- 7) Organising data from each question of the interviews together into a group.
- 8) Grouping data of each theme of the observations together.
- 9) Coding the data of each theme or concept as early as possible to be stored effectively as part of the analysis (Miles & Huberman, 1994).
- 10) Categorising the codes into groups according to the pattern of coding which is theme codes in this study (Miles & Huberman, 1994).
- 11) Making a matrix of these categories with the evidence to be supported.
- 12) Writing summaries of the findings about each theme within the structure of the theoretical framework to develop the main concepts of the study (Denscombe, 2010).

According to Yin, (2014, P. 142), *"the best preparation for conducting case study analysis is to have a general analytic strategy. The purpose of the analytic strategy is to link your case study data to some concepts of interest, then to have the concepts give you a sense of direction in analysing the data."* Consequently, the researcher adopted "relying on theoretical propositions strategy" as an overall analytic strategy to guide him through the analysis by following the theoretical propositions, which reflect research questions and literature review. In addition, through these propositions, data collection plan was shaped and analytic priorities were identified. Therefore, such propositions contribute to organising the entire analysis (Yin, 2014). The reason for using this analytic approach is the need to specify theoretical propositions before starting data collection and its analysis (Saunders et al., 2009) when

conducting the realism project, based on the position of the realists on their ontology (the existence of external single reality) (Christie et al., 2000; Perry, 1998; Sobh & Perry, 2006).

Generally, through qualitative analysis, data can be summarised, categorised, and structured by utilising narrative in order to understand the relationships within and among categories and to develop concepts for producing conclusions. However, there is no standardised approach for analysing qualitative data (Saunders et al., 2009). In this regard, there are several techniques that can be adopted to analyse case study, which include: Pattern matching, Explanation-building, Time-series, Logic model, and Cross-case synthesis (Yin, 2003; Collis & Hussey, 2009; Saunders et al., 2009). Among these methods, explanation-building was selected for analysing data of this study, as follows:

**Explanation-building:** This method represents a special type of Pattern matching by which an explanation can be built when collecting and analysing data. In most case studies, the common form in which explanation-building can be carried out is a narrative form (Yin, 2003; Saunders et al., 2009). To explain a phenomenon, there is a need for a set of propositions regarding its relationships, which is not easy to consider precisely in a narrative manner. As argued by Yin, *“Because such narrative cannot be precise, the better case studies are the ones in which the explanations reflect some theoretically significant propositions, whose magnitudes might start to offset the lack of precision”*. For instance, the relationships may provide crucial insights into public policy process leading to recommendations for further actions, or into social science theory resulting in major contributions to theory development, if their propositions are correct (Yin, 2014, P. 147). Consequently, the theoretical propositions and framework of this study played an essential role in analysing data of interview and direct observation in terms of the four phases of the present framework: needs, methods, development, and achievement.

In order to make the final explanation, the researcher has adopted the following stages when conducting the procedure of explanation-building (Yin, 2003):

- 1) Making initial theoretical propositions regarding the integration between marketing and operations integration.
- 2) Comparing the findings of an initial case with conceptual propositions.
- 3) Modifying the theoretical propositions.

- 4) Comparing other details of the case against the revision.
- 5) Again reviewing the propositions.
- 6) Comparing the revision to the data of a second case.
- 7) Repeating this process as many times as is needed.

In respect of the final explanation, it may not have been fully specified when conducting a single case study because the procedure would not be completed sufficiently. Therefore, the revised explanation should be applied to a number of cases: at least two cases, as multiple-case study to become conclusive evidence (Yin, 2014). In order to confirm or disconfirm the theoretical propositions and define the casual interactions between marketing and operations functions, this strategy was selected to analyse the qualitative data of the two cases. Furthermore, through adopting this analysis technique, the internal validity of research findings can be increased. In addition, the researcher used the explanation-building method while collecting data in order to tackle the unexpected patterns that emerged through the analysis process (Yin, 2003).

As reported by Miles and Huberman, (1994), qualitative data deals with words not numbers. Therefore, there are three techniques for analysing these data, which include data reduction, data display, and conclusion drawing and verification:

- I) Data reduction: through this process, the researcher selected, focused, simplified, abstracted, and transformed qualitative data collected. This process represents a part of analysis. Anticipatory data reduction was carried out when using a theoretical framework due to the opportunity to ignore some of the collected data which is irrelevant to the study (Miles and Huberman, 1994). In realism research, the interest is not in every detail of all perceptions of interviewees because *"only those perceptions relevant to the external reality are worth investigating"*. Therefore, through analysis data, codes were generated from the theoretical framework of study to reduce data (Sobh & Perry, 2006, P. 1204). In this process, the researcher made a data matrix consisting of Meta codes as main themes of the conceptual propositions of the study, codes emerging from data, and the evidence (Miles and Huberman, 1994). According to this matrix, the researcher was able to

categorise data into groups in accordance with the codes to be organised and prepared for the next process, which is data display.

- II) Data display: through this second main flow of analysis activity, the compressed information were organised for drawing conclusions. In addition, this process was helpful in understanding what is happening and taking action according to that understanding. Therefore, it can be argued that "better displays are a major avenue to valid qualitative analysis" (Miles and Huberman, 1994). According to the conceptual framework and the data, the researcher determined how to construct the displays. In this realism research, data was displayed by adopting three strategies. First, by using numerical frequencies of empirical experiences, but the researcher avoided numbers through the explanations of the displays. Second, the researcher provided an explanation about every observation. Next, the frequent use of quotations to support the explanations in the text with links to the interviewee who said it, in order to achieve in-depth understanding. In addition, data analysis computer software can be useful for tracking and matching every sentence or phrase of perceptions. However, this strategy is not essential for realists because realism research concerns only with those responses regarding the external, objective reality (Sobh & Perry, 2006). Therefore, the researcher did not use this technique.
- III) Conclusion drawing and verification: Conclusions such as patterns, explanations, possible configurations, causal flows, and propositions can be noted by the competent researcher from the start of collecting data. However, these conclusions are still unclear and ambiguous until the end of data collection and the emergence of the meanings when the data is interpreted by the researcher to define and develop themes and patterns (Miles and Huberman, 1994). As a result of the effective implementation of the first two analysis activities, conclusions were made and explanations were built while meanings of concepts and their relationships have been become understood to develop a theory.

#### **4.13 Personal views and Experience**

According to Perry, (1998), as a realist, the researcher is encouraged to acknowledge his own understanding and view of the research world, which are presented in this section. One of the most important and appropriate methods for researching a contemporary phenomenon within its real world is case study methodology (Yin, 2003). In this thesis, this methodology was a helpful strategy used for investigating marketing and operations integration in the Iraqi context, when adopting both inductive and deductive approaches under realism paradigm. It was very important to determine the level of induction and deduction that should be established to identify the way in which case study methodology can be carried out successfully. This relies on the role of each approach in achieving research objectives. In line with Perry (1998) and Sobh and Perry (2006), who emphasized the need for some deduction based on prior theory, although the inductive approach is more prominent to conduct case study research, the researcher believes that in this study, both approaches played a complementary role in implementing the four main stages of the research: literature review, Framework and propositions development, Case studies, and Theory development. The reason behind this is that induction and deduction are linked research approaches (Miles and Huberman, 1994), and “it is impossible to go theory-free into any study” (Richards, 1993, P. 40, cited in Perry, 1998, P. 788).

In first stage of the research, there was a need for the prior theory. Therefore, the researcher reviewed the relevant literature of marketing and operations interface in order to identify the gap in knowledge and develop research themes and questions, through a deduction process. Furthermore, this deduction was additional evidence for triangulating the reality of the phenomenon under study, as a result of the concepts emerged from the literature review. The deductive approach was also adopted in the second stage of the case study research. This adoption is for developing the conceptual framework of the study that was a helpful guideline for the researcher to carry out his research in the two case study organisations. Through this framework, the main concepts and their relationships were determined. In this stage, through deduction, the researcher also improved the theoretical propositions of the study, on which he relied to analyse data and build explanations. In the third stage of the research, the inductive approach has played an important role in collecting data when probing the interviewees and observing factories and sales centres. These combined data collection methods consisting of semi-structured interview and direct observation were helpful for gathering and triangulating information about perceptions and actions of the research subjects reflecting the reality of

marketing and operations interface in the Iraqi context. Furthermore, during this stage, there was induction for analysing data of the interview and observation, with some deduction when the researcher discussed and compared the findings with the theoretical propositions in the light of literature review. Finally, in the fourth stage of study, research objectives were achieved when developing the major conclusions and concepts through adopting the inductive approach for theory development. In conclusion, it is clear that using these two combined approaches helped in triangulating the external reality of marketing and operations integration, and developing a theory based on the existing theory and perceptions of respondents. Furthermore, it explored a good opportunity to develop the delivery performance of the two case study organisations through exploring the information from the observation. In addition, pictures can enrich textual commentary. Furthermore, observation allows reader to see and partially experience contextual setting whilst interview data adds thick commentary.

#### **4.14 Chapter Summary**

Overall, this chapter has highlighted the key issues of research methodology regarding realism paradigm, inductive and deductive approach, case study strategy, as well as how to collect and analyse qualitative data. The justifications for choosing these are also discussed in this chapter, relating to the way in which the research questions would be answered. The rationale for selecting the two Iraqi public manufacturing organisations as case studies for this research is presented. The semi-structured interview as a main method to collect data is discussed in detail, and there is also a note about the adopted triangulation of the present study that includes semi-structured interviews and direct observation. Finally, the discussion focused on how to analyse collected data by the adopted analytical technique.

## **CHAPTER FIVE**

### **FINDINGS AND DISCUSSION**

#### **5.1 Introduction**

In this chapter, the findings of the empirical investigation carried out within the two case study organisations in the Iraqi public industry sector are reported and discussed in the light of the literature review. In order to achieve the research aim and objectives, the researcher utilized different sources of evidence from which the study findings were produced. The main source of evidence was face-to-face semi-structured interviews. Direct observation was also conducted by the researcher for triangulating data collected from the interviews. This chapter begins with some background information on the Iraqi public textile industry sector and case study organisations A and B, which is followed by the findings of observation in section 5.2.4, and the findings of interview in section 5.3.

#### **5.2 History of the Iraqi public textile industry sector and the two Case Study Organisations**

##### **5.2.1 Iraqi Public Textile Industry Sector**

The textile industry is one of the most important transformative industries in Iraq, due to the availability of expertise and raw materials such as cotton and wool. In this industry, different kinds of fabric (e.g., cotton, woollen, and silk fabric, carpets, and knitwear) can be produced by weaving or knitting textile fibres (Merza, 2013; Shabaa, 2010). The textile industry has historical authenticity in Arabic countries, especially in Iraq and Egypt. People in Iraq used the textile industry from ancient times to meet their needs for clothes, particularly woollen clothes. Therefore, this industry was a major craft that spread widely when Iraqi people used colours for colouring the woollen cloth. At that time, as discovered by archaeology, these people utilised simple tools such as manual spindles and wooden planks for manufacturing cloth in their houses and workshops. As a result of the development of the different aspects of social and economic situation in successive years, textiles as an essential craft in Iraq has



been increasingly been improved, particularly with the availability of raw materials such as wool and cotton. This development involved spinning, weaving, and dyeing in terms of the raw materials, the tools used, and processes; but it was still simple and manual. This industry contributed to meeting the demand for various kinds of clothes, especially woollen clothes. Therefore, textiles have become a famous industry in Iraq. In the late 1920s, Iraqi and foreign investors began by establishing the textile factories in Iraq, such as the plant in Baghdad and Mosul, particularly when the government granted them tax/tariff exemption. This is the first step of the technological development in this sector especially with the relative stability of the political and economic situation in Iraq from 1930 to 1980. Due to the insufficient economic resources of the Iraqi government, the development of the textile industry was limited until Iraq began exporting petroleum at the beginning of the 1930s (Kajaji, 2002). As a result of the increase in petroleum revenues in Iraq over the period from the 1930s to 1980s, a number of large public textile organisations were established to meet the demand of local markets, as shown in Table 5.1 (Al-Shawi & Mohamed, 2011).

**Table 5.1 Iraqi public textile organisations**

<b>Company</b>	<b>Establishment year</b>	<b>Number of factories</b>	<b>Number of employees</b>
<b>Public company of wool industry in Baghdad</b>	1926	8	3176
<b>Public company of leather industry in Baghdad</b>	1931	3	3622
<b>Public company of cotton industry in Baghdad</b>	1945	4	2548
<b>Public company of textile industry in Hilla</b>	1967	4	5781
<b>Public company of textile industry in Wasit</b>	1971	3	3299
<b>Public company for clothing in Mosul</b>	1988	5	2220
<b>Public company of carpets industry in Baghdad</b>	1993	7	657

Source: Iraqi industry ministry. (2016). Historical information about Iraqi public textile organisations. Received from the textile industries department, Baghdad.

Due to the development of the Iraqi industry sector over the 1970s, the demand for the products of the public textile manufacturing organisations has increased because of the high quality and low price of these products particularly with the advanced experiences of this industry. However, due to the political and economic situation of Iraq during the 1980s and 1990s, the performance of these organisations, such as Textile Company in Nasiriya (Figure 5.1) has been negatively influenced (Al-Hafi, 2014; Fadlallah & Muwaffaq, 2011). Nevertheless, they were able to satisfy the demand for textiles in the local market due to the governmental support and limited imports regardless of the negative impact on the quality and price of these products (Al-Hafi, 2014).

**Figure 5.1 a sample of weaving machines used in Textile Company in Nasiriya pre war**



Source: Editorial Broad (2015). [www.nas2day.org/news/3966](http://www.nas2day.org/news/3966)

As a result of the decreased demand for the products of these organisations since 2003, due to fierce competition in the Iraqi market, they have been involved in the governmental development programme through the investments and partnerships with global organisations (Farhan, 2014; Iraqi industry ministry, 2013). For example, the Iraqi industry ministry imported new knitting machines for the Textile Company in Hilla (Figure 5.2) (Farhan, 2014).

**Figure 5.2 a sample of knitting machines in Textile Company in Hilla post war**



Source: Farhan, H. (2014)

Despite this development, in general, there is a decrease in the sales of the public textile organisations in Iraq, such as the sales of the public textile organisations in Wasit and Hilla, as shown in the Table 5.2 and 5.3. Therefore, there is a great need to improve the competitiveness of this sector to be able to compete in the market.

**Table 5.2 The sales of the public textile organisation in Wasit from 2002 to 2014 (The amounts in GBP)**

<b>Year</b>	<b>Sales</b>	<b>Year</b>	<b>Sales</b>
<b>2002</b>	15,583,400	<b>2009</b>	2,933,790
<b>2003</b>	4,561,280	<b>2010</b>	3,080,010
<b>2004</b>	3,439,220	<b>2011</b>	1,805,300
<b>2005</b>	2,980,450	<b>2012</b>	3,160,680
<b>2006</b>	2,475,160	<b>2013</b>	2,453,640
<b>2007</b>	2,392,600	<b>2014</b>	3,860,000
<b>2008</b>	2,973,540		

Source: Public textile organisation in Wasit. (2015). Historical information about the sales. Received from the marketing department. Wasit, Iraq.

**Table 5.3 The sales of the public textile organisation in Hilla from 2010 to 2014 (The amounts in GBP)**

Year	Sales
2010	1,430,170
2011	2,060,490
2012	4,233,690
2013	3,055,820
2014	1,071,090

Source: Public textile organisation in Hilla. (2015). Historical information about the sales. Received from the marketing department. Hilla, Iraq.

## 5.2.2 Textile Industry Processes

The textile industry is very complex and its production system includes a large number of sequential processes which are time consuming. This industry involves many different stages according to the raw materials and the kind of final product. Generally, these stages can be grouped into three main sections, namely spinning, weaving, and finishing (Mazharul, 2014), as follows:

- 1. Spinning:** this is the first stage of textile product processing in which yarns can be made from the textile fibres through twisting the drawn out strands of fibres, inserting the twist, and then winding the yarn onto bobbins (Figure 5.3).

**Figure 5.3 Spinning stage**



Source: Klapper, N. (2015)

- 2. Weaving:** in this process, the fabric as a raw product can be produced through interlacing the warp and weft threads. Warp yarns should be prepared for this process by applying the size material on yarn to be protected from the abrasion (Figure 5.4).

**Figure 5.4 Weaving stage**



Source: Wei, H. (2016).

- 3. Finishing:** this is the end step of producing the final product through adding value, quality, and appearance to it. These final processes are divided into two categories: mechanical and chemical processes. The processes of the stages differ according to the use of the final product (Figure 5.5).

**Figure 5.5 Finishing stage**



Source: Ambedkar, B. (2016)

### **5.2.3 Case Study organisations**

#### **5.2.3.1 Case Study A**

The first case study organisation A is a public textile company located in the city centre of Hilla. This firm was established in 1967, and has 5781 employees. At that time, this organisation had one factory for producing silk fabrics and the polyester. During the 1970s and 1980s, three factories were founded within this organisation, namely a factory for velvet and Gobelin fabric, the Dewania textile factory, and a men's garment factory in 1976, 1978, and 1981 respectively. This organisation seeks to improve the performance of its plants and increase their profits through the collaboration among these factories. For example, textile factories of this organisation supply their products to the Najaf factory for sewing. This firm sells its products to customers in the local markets and to public organisations such as the higher education ministry and health ministry. In this organisation, there are six centres for selling products which are located in different cities, namely Hilla, Baghdad, Najaf, and Karbala (Public textile company in Hilla, 2014).

#### **5.2.3.2 Case Study B**

The second case study B is a public textile organisation located in the city centre of Wasit. This company was established in 1971, and has 3299 employees. It includes three factories, the first plant is a spinning factory for producing yarns, and the second is a weaving plant which manufactures different kinds of cotton fabric. These two plants were founded in 1970. The third factory is a knitting factory that was established in 1966 for producing different kinds of knitwear from wool, polyester, acrylic, and cotton yarns. This organisation also sells its products to customers in the local markets and to public companies in other ministries through its sales centres in different cities, namely Wasit, Hilla, Baghdad, Najaf, and Karbala (Public Textile Company in Wasit, 2014). As shown in Chapter One, after 2003, the amount of the sales of these two organisations has decreased. This reflects the extent of marketing and operations coordination in these firms, which needs to be developed and supported by the Iraqi government through adopting market orientation. In these two case study organisations, there is a use of two kinds of CFTs. The first kind consists of managers of different departments of a firm, which is responsible on making strategic plans and decisions of the organisation, due to the knowledge and expertise of members. In addition, the leader of this

team is the senior manager of the company. The second kind of CFTs comprise employees from various functions of a firm, who are brought together to implement specific tasks such as the market research team for gathering information from the market (Public Textile Company in Hilla, 2014; Public Textile Company in Wasit, 2014).

#### **5.2.4 Findings of Cases Observations**

According to the analysis of data collected by direct observation, the researcher found that findings of observing factories and sale centres of the two case study organisations A and B are different in some aspects, as shown in Tables 5.4 and 5.5. In this section, the researcher reported and discussed these findings in the light of the literature, which are grouped into the six following themes of observation in order to achieve the research objective *“To investigate the delivery performance of Iraqi public textile manufacturing organisations which utilise CFTs”*.

- 1) Factory layout
- 2) Manufacturing technology
- 3) Manufacturing processes flow
- 4) Balance of production line
- 5) Materials handling
- 6) Finished Product

##### **5.2.4.1 Factory Layout**

As observed by the researcher, the layout of all factories of both case study organisations is product layout (Evans & Collier, 2007; Krajewski et al., 2013) as set out in Tables 5.4, P 155 and 5.5, P 157. In other words, the production facilities of these plants such as personnel and operating equipment are organised in the sequence as required by the product (See Picture 5.1). Furthermore, the stages of production lines are organised in accordance with the sequence of manufacturing processes of product such as spinning, weaving, and finishing.



According to this sequence, the production resources and facilities of these stages are divided. Each of these stages consists of a number of sequential subsections that include groups of machines or workstations, which are close to each other (See Picture 5.2). Due to the close proximity of these workstations, the parts of a product need little time to wait and to move from one workstation to the next workstation. As a result of this, a product flows rapidly throughout the production line. Furthermore, the space between the subsections and workstations is appropriate for using materials handling equipment efficiently and quickly, thus reducing manufacturing time, and then delivery time. This is consistent with the relevant literature which emphasizes the significant impact of factory layout as one of the most important production decisions on delivery performance. In this respect, the product layout can enhance the ability of firms to deliver products to their customers rapidly due to its contribution to avoiding the delays in production lines (Stalk, 1988; Stalk & Hout, 1990). Consequently, the integrated decision of CFTs on the factory layout of all plants in the two case study organisations positively impacts the delivery performance of these companies.

**Picture 5.1 Product layout of F1**



Sewing machines in the production lines of F1, which are organised in the sequence as required by the product



**Picture 5.2 Product layout of F6**



Weaving machines in the production lines of F 6, which are close to each other.

#### **5.2.4.2 Manufacturing Technology**

According to the observation of the factories in both case study organisations, Plants 1, 4, and 7 have adopted new technology in their full production lines, while other factories use outdated technology in some departments, as shown in Tables 5.4, P 155 and 5.5, P 157 (See Pictures 5.3 to 5.15). As mentioned in the literature, the adoption of advanced technology in manufacturing, such as CAD and CAM, strongly contributes to reducing time consumption in operations and to developing product quality, thus fast delivery of products. In addition, the manufacturing strategy could be flexible by using new production technology in order to meet the diverse market demand quickly (Stalk & Hout, 1990; Song & Swink, 2002; Brethauer, 2002; Droge et al., 2004; Lin et al., 2012). Therefore, the delivery performance of Factories 1, 4, and 7, which use new machines in all their departments, could be better than those that utilise old machines in some stages of their production lines. The reason for this is the negative impact of the outdated machines on the productivity of production line.

**Picture 5.3 Advanced manufacturing technology of cutting fabric stage in F1**



A fabric cutting machine in production lines of F1 that is automatic and computerised.

**Picture 5.4 Advanced manufacturing technology of sewing stage in F1**



Sewing machine in the production lines of F1 that is automatic and computerised.

**Picture 5.5 Advanced manufacturing technology of weaving stage in F2**



Weaving machine in the production lines of F2 that is automatic and computerised.

**Picture 5.6 Outdated manufacturing technology of spinning stage in F2**



An outdated machine for spinning yarns in the production lines of F2.

**Picture 5.7 Advanced manufacturing technology of weaving stage in F3**



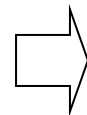
Weaving machine in the production lines of F3 that is computerised.

**Picture 5.8 Outdated manufacturing technology of finishing stage in F3**



Finishing machines in the production lines of F3 that are outdated.

**Picture 5.9 Advanced manufacturing technology of weaving stage in F4**



Weaving machine in the production lines of F4 that is automatic and computerised.

**Picture 5.10 Advanced manufacturing technology of finishing stage in F4**



Finishing machine in the production lines of F4 that is automatic and computerised.

**Picture 5.11 Advanced manufacturing technology of spinning section in F5**



A robot of spinning machine in the production lines of F5, which reflects a high manufacturing technology.



**Picture 5.12 Advanced manufacturing technology of spinning section in F5**



Cotton carding machines in production lines of F5 that are automatic and computerised.

**Picture 5.13 Outdated manufacturing technology of weaving machines in F6**



Weaving machines in the production lines of F6 that are outdated.

**Picture 5.14 Advanced manufacturing technology of knitting machines in F7**



Knitting machines in the production lines of F7 that are automatic and computerised.

**Picture 5.15 Advanced manufacturing technology of finishing stage in F7**



A printing machine in the production lines of F7 that is automatic and computerised.

#### **5.2.4.3 Manufacturing Processes Flow**

As the researcher observed, the manufacturing processes in all factories of the two case study companies flow sequentially and continuously from one activity to the next activity according to the inherent precedence of production processes within the overall task. Due to the sequential flow of processes, manufacturing time involves the time necessary for processing, which is valuable, and the time for waiting and moving from one step to the next step, which is non-valuable. This theme was illustrated in the relevant literature, as stated by Krajewski et al. (2013), if the processes do not share production resources, they can be rearranged in parallel in order to reduce operations time, but processes that share resources should be sequential. For example, in Factory 1, the researcher observed that the manufacturing processes of the suit consisted of the processes of the jacket and trousers sequentially while these two groups of processes could be performed simultaneously, because they do not share production resources such as raw materials. Therefore, there is a need for studying these activities through using process mapping technique as a basis for improvement (Evans & Collier, 2007; Krajewski et al., 2013) by CFTs to identify those that do not share their resources to be performed concurrently and also to eliminate the non-valuable activities in order to reduce time consumption in the production line. According to the observation of the researcher, in Factories 1, 3, 4, and 7, the production processes flow smoothly while in the other plants, this flow is unsmooth due to the variability in the efficiency and capacity of machines. The main reason for this is the use of outdated production technology which causes

breakdowns in some workstations such as spinning machines in Factory 2, and weaving machines in Factory 6, as set out in Tables 5.4, P 155 and 5.5, P 157. This is consistent with Slack et al. (2009), who argued that the breakdowns in a stage within a manufacturing process can lead to variability in the process that decreases its efficiency, thus variability in activities time. This variability can negatively influence production schedules and manufacturing time.

#### **5.2.4.4 Balance of Production Line**

According to the observation of the factories in both case study organisations, the researcher found a number of bottlenecks in some workstations into the production lines of Factories 1 and 6, as shown in Tables 5.4, P 155 and 5.5, P 157 (See Pictures 5.16 and 5.17). As indicated by Slack et al. (2009), these bottlenecks occur because of allocating the work unequally to each workstation through which the time of activities will be wasted as a percentage of manufacturing time. Furthermore, this imbalance leads to inefficient use of production resources that reduces the time invested in manufacturing the product, thus productivity will be decreased.

**Picture 5.16 Bottlenecks of sewing stage in F1**



Unbalanced flow of product among sewing machines in the production lines of F1, causing bottlenecks.

**Picture 5.17 Bottlenecks of sizing section in F6**



Unbalanced flow of product between sizing and weaving stages in the production lines of F2, causing bottlenecks.

#### **5.2.4.5 Materials Handling**

According to the observation of the plants of both case study organisations, most of these factories use the appropriate transport equipment for handling materials, parts or products such as 4-wheeled trucks and lift trucks, but there is a need for regular maintenance, as shown in Tables 5.4, P 155 and 5.5, P 157 (See Pictures 5.18 to 5. 23 and 5.25). In addition, this equipment is convenient to the layout of these factories. Therefore, the researcher observed rapid and easy movement when handling materials among workstations or machines into these plants. However, some transport equipment in Factory 6 is inappropriate to be utilised due to the damage of wheels and body (Picture 5. 24). This is consistent with Slack et al. (2013) who stated that the appropriate use of this equipment helps to reduce handling time that is a part of manufacturing time. Furthermore, this equipment should be appropriate for the layout of factories. Accordingly, the decision on the use of transport equipment contributes to developing production capabilities through decreasing the time of handling materials in order to produce and deliver products rapidly to customers.



**Picture 5.18 Materials handling equipment of F1**



4- Wheeled trucks that are used for handling materials in production lines of F1.

**Picture 5.19 Materials handling equipment of F2**



A lift truck that is used for transporting materials in production lines of F2

**Picture 5.20 Materials handling equipment of F3**



4- Wheeled truck that is used for handling materials in production lines of F3.

**Picture 5.21 Materials handling equipment of F4**



4- Wheeled truck that is used for transporting fabric rolls in production lines of F4.

**Picture 5.22 Materials handling equipment of F5**



A truck that is used for handling yarns bobbins in the production lines of F5.

**Picture 5.23 Materials handling equipment of F6**



A lift truck that is used for transporting fabric rolls in production lines of F6.

**Picture 5.24 Materials handling equipment of F6**



Inappropriate truck that is used for handling materials in production lines of F6.

**Picture 5.25 Materials handling equipment of F7**



A pelvic truck that is used for transporting materials in production lines of F7.

#### **5.2.4.6 Finished Product**

According to the observation of the three sales centres of the case study companies, one advantage of these centres is their close proximity to the factories and city centre, except Najaf centre which is located far from the city centre. Furthermore, these centres share their products in order to develop their distribution programme. In addition, in Najaf centre, the products are varied and well organised and packaged in order to attract the customers and encourage them to buy from this centre. However, in other centres, the products are not well-organised and packaged, as shown in Tables 5.4, P 156 and 5.5, P 158 (See Pictures 5.26 to

5.30). Furthermore, to manage the information of customers' orders, the personnel of these centres utilise paper, forms, and database.

In addition, the researcher observed some routine procedures in these centres such as using documents signed by the manager when they sell products to the retailers and public companies. In line with Kotler & Armstrong (2012), who emphasized the essential role of managing customers' orders effectively in developing customer service in delivery, the above advantage and disadvantages reflect the extent to which CFTs are able to develop delivery capabilities through marketing programmes. Indeed, by using these programmes, such as product, promotion, distribution, distribution channels, and information system effectively, marketing people can avoid wasting the advantages of time-based production (Azzone et al., 1991; Tammela et al., 2008; Lin et al., 2012).

**Picture 5.26 Sales centre of Case Study Organisation A in Najaf**



Suits that are offered for sale in sales centre of case study organisation (A) in Najaf.



**Picture 5.27 Sales centre of Case Study Organisation A in Najaf**



Suits that are offered for sale in sales centre of case study organisation (A) in Najaf.

**Picture 5.28 Sales centre of Case Study Company A in Hilla**



Different kinds of fabrics that are offered for sale in sales centre of case study organisation (A) in Hilla.

**Picture 5.29 Sales centre of Case Study Company A in Hilla**



Different kinds of fabrics that are offered for sale in sales centre of case study organisation (A) in Hilla.

**Picture 5.30 Sales centre of case study company B in Wasit**



Different kinds of fabrics that are offered for sale in sales centre of case study organisation (B) in Wasit.

**Picture 5.31 Sales centre of case study company B in Wasit**



Different kinds of clothes that are offered for sale in sales centre of case study organisation (B) in Wasit.

**Table 5.4 Findings of themes emerging from observing factories and sales centres of case study A**

<b>Themes</b>	<b>F1</b>	<b>F2</b>	<b>F3</b>	<b>F4</b>
<b>Factory layout</b>	Product oriented	Product oriented	Product oriented	Product oriented
<b>Manufacturing technology</b>	High technology in all production sections (Pictures 5.3 and 5.4)	High technology in weaving section (Picture 5.5) but outdated technology in other sections (Picture 5.6)	High technology in weaving section (Picture 5.7) but outdated technology in other sections (Picture 5.8)	High technology in all production sections (Pictures 5.9 and 5.10)
<b>Manufacturing processes flow</b>	Processes flow sequentially and smoothly	Processes flow is sequential but not smooth	Processes flow sequentially and smoothly	Processes flow sequentially and smoothly
<b>Balance of production line</b>	Bottlenecks in some workstations of sewing section (Picture 5.16)	Production line is balanced	Production line is balanced	Production line is balanced
<b>Materials handling</b>	Transport equipment is sufficient and appropriate to be utilized but there is a need for maintenance. (picture 5.18)	Transport equipment is sufficient and appropriate to be utilized (picture 5.19)	Transport equipment is sufficient and appropriate for utilizing but there is a need for maintenance. (Picture 5. 20)	Transport equipment is sufficient and appropriate for utilizing but there is a need for maintenance. (picture 5.21)

<b>Finished Product</b>	<b>Sales centre of the firm in Najaf</b>	<b>Sales centre of the firm in Hilla</b>
	<p>*The sales centre is far from the city centre.</p> <p>*The products are varied and well-organised.</p> <p>*The orders are managed simply.</p> <p>*Orders' information is managed by using papers, forms, and database.</p> <p>*The products are not well-packaged.</p> <p>(See Pictures 5.26 and 5.27)</p>	<p>*Sales centre is located in the city centre.</p> <p>*The products are varied but not well-organised.</p> <p>*Orders are managed simply.</p> <p>*Order information is managed by using papers, forms, and database.</p> <p>*Products are not well-packaged.</p> <p>(See pictures 5.28 and 5.29)</p>



**Table 5.5 Findings of themes emerging from observing factories and sales centre of case study B**

<b>Themes</b>	<b>F5</b>	<b>F6</b>	<b>F7</b>
<b>Factory layout</b>	Product oriented	Product oriented	Product oriented
<b>Manufacturing technology</b>	High manufacturing technology of spinning machines (Pictures 5.11 and 5.12)	Outdated manufacturing technology in weaving section (Picture 5.13).	High technology in all sections of production. (Pictures 5.14 and 5.15)
<b>Manufacturing processes flow</b>	Processes flow is sequential but not smooth	Processes flow sequentially and smoothly	Processes flow sequentially and smoothly
<b>Balance of production line</b>	Production line is balanced.	Some bottlenecks in sizing section (Picture 5.17)	Production line is balanced.
<b>Materials handling</b>	Transport equipment is sufficient and appropriate for utilizing. (Picture 5. 22)	Some transport equipment is inappropriate to be utilized due to the damage in wheels and body. (Pictures 5. 23 and 5.24)	Transport equipment is sufficient and appropriate for utilizing. (Picture 5.25)

<b>Finished Product</b>	<b>Sales centre of the firm in Wasit</b>
	<ul style="list-style-type: none"> <li>* Sales centre is located in the city centre.</li> <li>* The products are varied but not well-organised.</li> <li>*The orders are managed simply.</li> <li>*Orders' information is managed by using papers, forms, and database.</li> <li>*The products are not well-packaged.</li> </ul> <p>(See Pictures 5.30 and 5.31)</p>

### **5.3 Findings of Collected data by Interview**

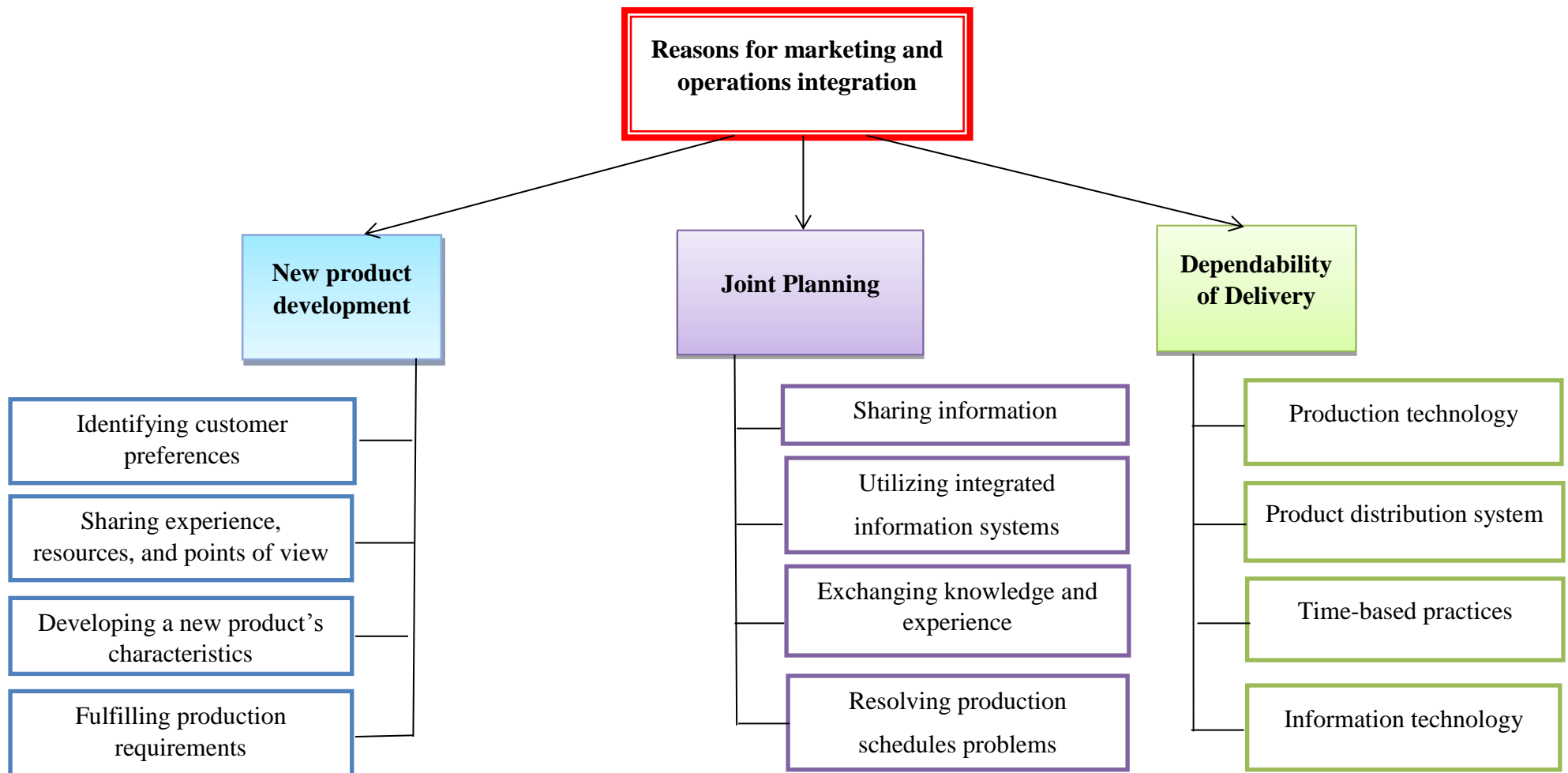
According to the analysis of data collected by interviews, the findings of both case study organisations were presented in analysis matrices, which are grouped into a number of codes relating to the main themes of the study (Appendix 17). These findings are divided in accordance with the four phases of the conceptual framework of the research to be reported and discussed with reference to the research questions.

#### **First phase: The needs for interfacing marketing with operations**

##### **5.3.1 Findings emerging from Research Question One "Why should marketing and operations groups work together?"**

According to the findings of this research, many reasons behind the need for the integration between marketing and operations functions were conceived by respondents in both case study organisations. These perceptions have been categorised into three groups: (I) new product development (II) joint planning, and (III) dependability of delivery, as shown in Figure 5.6.

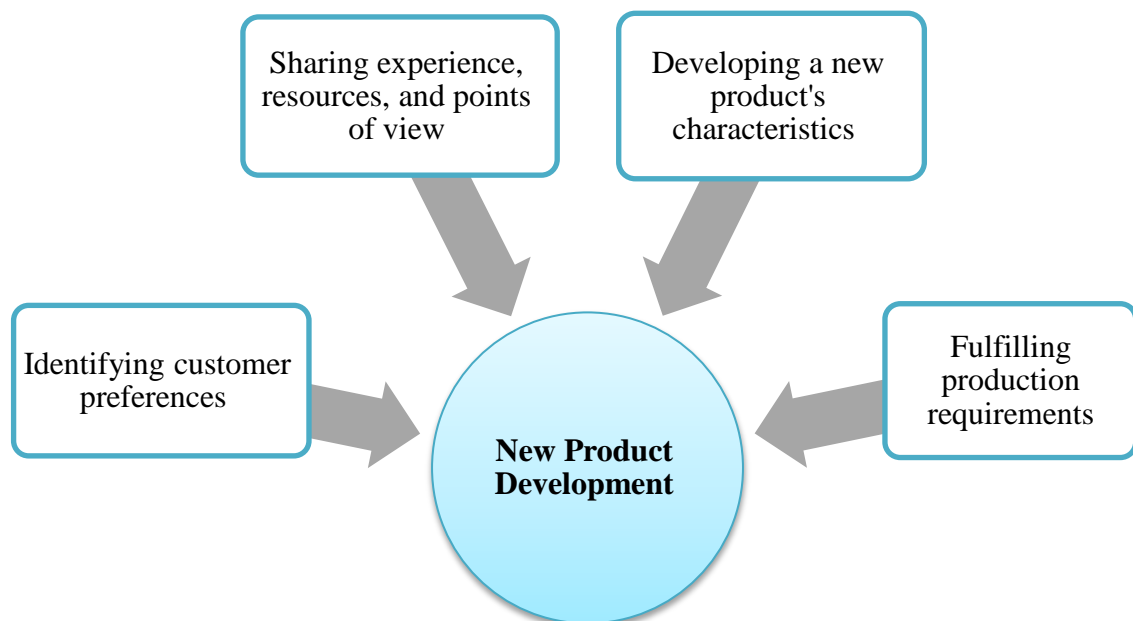
**Figure 5.6 Findings of first research question, “Why should marketing and operations groups work together?”**



### 5.3.1.1 New Product Development

As demonstrated by other scholars (Gonzalez et al., 2004; Hausman et al., 2002; Jassawalla and Sashittal, 2006; Swink and Song, 2007; Troy et al., 2008), the vast majority of interviewees reported that marketing and operations people need to work jointly in many aspects when developing new products, due to interdependent tasks. According to the analysis of data, these responses have been summarised into four categories: (I) Identifying customer preferences (II) Sharing experience, resources, and points of view (III) Developing a new product's characteristics, and (IV) Fulfilling production requirements. (See Figure 5.7)

**Figure 5.7 Findings of interview question 1 “How do marketing and operations work together in developing new products?”**



## **I- Identifying customer preferences**

There is a substantial body of NPD research which indicates that determining customer expectations by marketing and operations groups together strongly contributes to developing new products successfully. As mentioned by Bendoly et al. (2012), many researchers (e.g. Brown and Eisenhardt, 1995; Griffin and Hauser, 1992; Kim et al., 2010; Troy et al., 2008) have highlighted the significant positive impact of the convergence between marketing and operations functions on the NPD process through defining and understanding customers' needs correctly and before competitors. In keeping with this, the majority of respondents seemed to agree that correctly identifying the preferences of customers is an essential issue of the collaboration between marketing and operations groups when implementing a NPD project. As participants said:

*“Implementing new product development process begins with defining customer needs by marketing and operations people together. Marketing people gather information from markets about customers and competitive products to share and discuss this information with manufacturing personnel in order to determine what customers need and want.”* (R5)

*“In my organisation, marketing management uses employees from marketing and operations departments within a team for collecting information about customer expectations and competitors from the local markets. Furthermore, this information is utilised by marketing and operations groups to determine what customers prefer in order to satisfy these preferences through developing new products.”* (R13)

As Gonzalez et al. (2004) indicated, marketing personnel play an essential collaborative role in the NPD process when gathering and providing accurate market information for the NPD team in order to define correct customer expectations before competitors. In line with this, some participants stressed the importance of the accuracy and timing of market information

that is collected by the marketing group to develop new products successfully. For instance, one respondent commented:

*“Due to the close relationship between marketing personnel and customers, they can provide accurate market information for operations personnel in due season to be shared and discussed by the two groups to understand what customers need. According to this understanding, they can develop the characteristics of a new product. For this purpose, my organization encourages marketing people to collect accurate information from the market place through granting them rewards.” (R14)*

## **II- Sharing experience, resources, and points of view**

The extensive research on NPD widely recognizes the imperative role of sharing resources and experience among marketing and operations areas to implement the NPD process successfully. In this respect, many studies have increasingly paid attention to investigating the positive impact of the integration between marketing and operations functions on NPD processes' success due to the diversity of their shared resources, communication, and knowledge (Calantone et al., 2002; Guenzi and Troilo , 2006; Hausman et al., 2002). In keeping with this research, most respondents provided evidence to suggest that sharing resources and expertise between marketing and operations groups when they come together to develop new products can lead to product innovation, which is essential to meet customer's expectations. As participants commented:

*“In my organization, there is collaboration between marketing and operations groups to develop new products through sharing their experience, sources, and opinions. This sharing helps them to generate new ideas for making changes in the specifications of products and processes in order to meet customers' expectations. In addition, the close informal relationships among these personnel*

*underpin their abilities to benefit from their experience and resources together.”*  
(R6)

*“In the NPD process, sharing different experiences and ideas between marketing and operations personnel can lead to innovation which is essential for designing new products or making modifications in existing products in order to satisfy customers' needs.”* (R15)

Some respondents commented that marketing and operations people can improve their experience and knowledge through learning when they share their views and opinions. This makes NPD process more valuable and beneficial. This is consistent with the literature on CFTs regarding the learning of members for product innovation. For example, Jassawalla and Sashittal (2006) stated that sharing ideas and experience among members of NPD teams can lead to developing their knowledge and shared understanding, which is necessary to be innovative. This is seen in the following data:

*“The diversity of knowledge and expertise of marketing and operations people can be more beneficial in developing new products when the two groups are collaborative in exchanging their various experiences and views. Thus this sharing will be an important resource for developing the integrated knowledge of these people.”* (R8)

*“Sharing experience and knowledge between marketing and operations personnel when developing new products can be a good opportunity to learn from each other. This learning can contribute to enhancing the ability of these people to develop new products frequently and rapidly.”* (R17)



### III- Developing a new product's characteristics

As mentioned in the NPD literature, marketing and operations people are involved in many specialized tasks with a high degree of interdependence when developing new products (Song & Swink, 2002; Swink & Song, 2007). For example, one of the most critical tasks of marketing personnel is translating customer needs into new product specifications which require specific manufacturing capabilities to be met. Due to these interdependencies, the joint involvement of marketing and operations functions is crucial for improving the design of new products and processes to satisfy customer expectations (Swink & Song, 2007). Consequently, developing the characteristics of products as an important joint activity of marketing and operations groups was mentioned frequently by most participants. They believe that people from marketing and operations functions can improve new features of products through their diverse experience and knowledge by which customer's needs can be met. For example, respondents argued:

*“Through exchanging the information and knowledge among marketing and operations groups, these people will share their understanding about customers’ preferences, competitive products, and production resources clearly. This can help them to improve the characteristics of existing products jointly as their customers need and want.” (R10)*

*“Due to the collaboration and participation between marketing and operations groups through exchanging their views and experience, creative ideas could be generated to improve new design and features of products according to the production capabilities of the company. Therefore, these personnel share their different points of view in their regular and irregular meetings to discuss how to develop new products according to their shared information.” (R18)*

As pointed out by Brettel et al. (2011); and Slack et al. (2013), many researchers agreed that the collaboration among marketing, operations, and R&D as core departments fundamentally contributes to developing new design and features of products and processes. In this respect, correctly defining the expectations of customers by marketing personnel and employing sufficient production requirements by the operations group strongly lead to developing the characteristics of innovative products by R&D people (Gonzalez et al., 2004; Slack et al., 2009). In line with this, several participants illustrated that the joint work of marketing, operations, and R&D functional areas play an essential role in developing product and process design, depending on market and production requirements. This is seen in the following data:

*“As a result of the collaboration between marketing, operations, and R&D people through exchanging and analysing market and production information among them, they can satisfy customers’ expectations by improving innovative product design. The underlying reason behind this innovation is the ability of these groups to translate market needs into production capabilities adequately and efficiently.”*  
(R7)

*“Through understanding the competition and customers in the market place correctly by marketing group, R&D personnel can develop new designs of products and processes successfully according to this understanding. This development relies on the ability of operations people to improve their resources for manufacturing the new products.”* (R20)

#### **IV- Fulfilling production requirements**

The majority of participants presented evidence to suggest that the operations function strongly contributes to developing new products through determining and using production requirements adequately and efficiently to be convergent to marketing personnel. This is consistent with Gonzalez, Quesada, Mueller, and Mora-Monge (2004); Swink and Song (2007); and Song and Swink (2002) who emphasized the importance of employing sufficient production capabilities by production people for improving new products. As seen in the following interview excerpts:

*“Operations people can be collaborative with the marketing group to develop and manufacture new products when they identify and utilise tactical requirements such as machines and materials efficiently and adequately. This may require some changes in the production line in order to meet market demand.” (R11)*

*“The operations group, in turn, translates the new characteristics of existing products into production capabilities and facilities through adopting an efficient production system and making some modifications in manufacturing resources as required for producing the new product before competitors. In this respect, using new technology in the factory can enhance the ability of the operations group to respond to the new design of product.” (R14)*

As Brettel et al. (2011) indicated, marketing and operations people as core members of NPD team are involved in many interdependent tasks, such as those which relate to production requirements. Furthermore, the two groups need to make decisions together on some modifications in production capabilities and facilities to meet the tactical requirements of new products (O’Leary-Kelly and Flores, 2002). In keeping with this, some respondents stressed the importance of the joint work of marketing and operations functions to make changes in production capabilities that are required for producing new product. For example, one participant commented:

*“In order to develop new product design, operations personnel need to define and employ production resources that may require making some modifications in production lines. Furthermore, in my company, the decisions on the modifications of production capabilities are often made by the marketing and operations groups together.”* (R4)

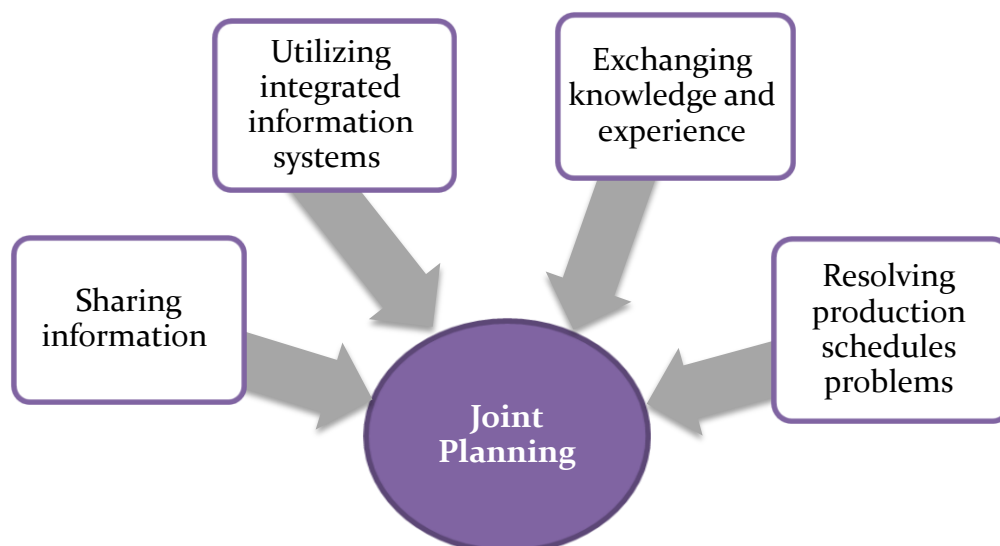
However, a minority of respondents illustrated that only the operations group is responsible for making and implementing decisions on modifications in manufacturing facilities and resources as required for manufacturing new product. As participant said:

*“In my company, operations people make some changes in the production lines as required for manufacturing new product. These changes may include machines, employees or other production facilities. In this respect, the operations manager holds a meeting with the engineers in this department to discuss the decision on these requirements and to implement it.”* (R9)

### 5.3.1.2 Joint Planning

As mentioned in the relevant literature, making marketing and operations plans and decisions for resources by the two groups together is a strategic imperative for matching demand to supply (Hausman et al., 2002; Tang 2010; Tavares Thome et al., 2012; Sharma 2013). Therefore, this theme was identified by the vast majority of respondents as a fundamental requirement for achieving the conformity between marketing and operations plans. Consequently, through analysing the participants' data, the researcher found that this data can be categorized into four groups: (I) Sharing information (II) Utilizing integrated information systems (III) Exchanging knowledge and experience (IV) Resolving production schedules problems (See Figure 5.8).

**Figure 5.8 Findings of interview question 2 “How do marketing and operations work together in making plans and decisions?”**



## **I- Sharing information**

There is a fundamental body of research on marketing and operations integration which emphasizes that sharing information between the two groups can help them to implement planning activities and make planning decisions together (e.g., Brettel et al., 2011; Cho & Lee, 2013; Lee & Whang, 2000; Tang, 2010). In keeping with this research, the vast majority of participants mentioned that marketing and operations functions need to exchange their information regarding market demand and production requirements to be a valuable resource for integrated planning, as emphasised by the following respondents:

*“Marketing and operations personnel need to share their understanding about market needs and manufacturing requirements to be able to make their plans and decisions jointly. In order to achieve this understanding, these two functions should exchange their information.”* (R3)

*“Due to the work division and different responsibilities of marketing and operations functions, they tend to make their plans and decisions independently. Therefore, there is a need to achieve the convergence between the two departments through sharing their information to be able to work together in this process.”* (R21)

## **II- Utilizing integrated information systems**

As demonstrated by Bharadwaj et al. (2007); Gattiker (2007); and Sharma (2013), marketing and operations functional areas need to use integrative mechanisms such as integrated information systems for sharing and processing their information effectively to be coordinated, thus reducing uncertainty. Therefore, this use facilitates the convergence between marketing and operations areas when they make their plans and decisions together. Consequently, most respondents highlighted the contribution of adopting integrated information systems by marketing and operations personnel to their joint work of planning. Furthermore, they believe that the two functions can deal with their huge amount of information efficiently through this adoption. For instance, two interviewees said:

*“Making plans and decisions by marketing and operations departments jointly depends on their ability to manage and share their information efficiently to be accurate, coordinated, and available in good time. This ability can be enhanced through utilizing an effective information system by the two groups together, which is valuable for planning.”* (R4)

*“The use of an information system by marketing and operations personnel together is critical for making joint plans and decisions due to its contribution to dealing with the huge amount of their information effectively and rapidly to be more beneficial in this respect.”* (R18)

As stated by Cho and Lee (2013); and Lee and Whang (2000), this study found some evidence of the impact of using integrated information systems in reducing the errors and variations that may occur when marketing and operations groups implement their planning activities together. This is because of the contribution of these integrated mechanisms to increasing the accuracy and coordination of information. This is seen in the following data:

*“Marketing and operations departments can make correct plans and decisions through using the information system jointly by which the potential errors and variations could be reduced when implementing this process. The reason for this is the important role of this system in coordinating information and increasing its accuracy. In my organization, there is a need for the information system to process the huge amount of marketing and operations information to be more coordinated.”* (R5)

*“By sharing information among marketing and operations people about the market demand and production requirements, their plans and decisions could be made jointly. But these plans and decisions can be more accurate and clear if these two groups utilize an information system together to process their information efficiently.”* (R21)

### III- Exchanging knowledge and experience

As stated by Hausman et al. (2002); O’Leary-Kelly & Flores (2002); and Tang (2010), some participants reported that marketing and operations personnel can jointly be involved in integrated planning through sharing their knowledge and expertise regarding the dynamic market and production capabilities. As a result of this, they can benefit from their diverse experience to develop and coordinate their planning activities. This is demonstrated well in the following data:

*“The coordination between marketing and operations groups to make their plans and decisions together can be developed when they benefit from the diversity of their knowledge and experience about market demand and production resources of the company. In my organization, there are meetings for making sales and production plans by marketing and operations people together who discuss their plans according to their experience in this regard.”* (R9)

*“Due to the interdependency between marketing and operations functions, the collaborative planning activities of these people require an exchange of their expertise and knowledge regarding market requirements and manufacturing facilities in order to make correct plans and decisions for both.”* (R19)

As Tang (2010) demonstrated, some respondents illustrated that sharing experience among marketing and operations personnel when they make their plans and decisions for resources jointly can lead to reduced disagreements that may occur between them. This is because of their clear and shared understanding about market conditions and manufacturing capabilities. As one participant argued:

*“Marketing and operations functions can develop their planning activities together through exchanging their expertise and knowledge between them to be more coordinated. This development can be a great help for joint planning and reducing problems that may happen between them.”* (R2)



#### **IV- Resolving production schedules problems**

Some participants indicated that production scheduling problems can be solved early by marketing and operations groups together as a result of their collaborative planning activities. This theme was illustrated in the literature, as stated by Tang (2010), marketing and operations personnel can benefit from their coordinated plans to tackle the problems that may occur when implementing production schedules. This reflects the high coordination between these two groups in production planning, as seen in the following interview excerpts:

*“Due to the collaborative work of marketing and operations departments when they make their plans and the clarity of these plans for both, these two groups can discuss the problems of scheduling production together and find rapid solutions to these problems to be solved early.”* (R1)

*“As a result of the joint planning of marketing and operations people, they can deal with the production schedules problems quickly together to be resolved. In this organization, operations personnel review daily reports of the factory in order to define production problems early, and if there is any problem or delay in production schedules, they will come together with the marketing group in a meeting to tackle this problem.”* (R12)

However, a minority of participants argued that marketing and operations people make their plans for resources in a separated manner, according to their shared information. Furthermore, they added that these two groups discuss their plans with other departments of a firm during their meetings in order to make changes if necessary, as one of them reported below. In contrast, Tang (2010) mentioned that this separate planning leads to conflict between these two groups because of their different functional objectives and responsibilities.

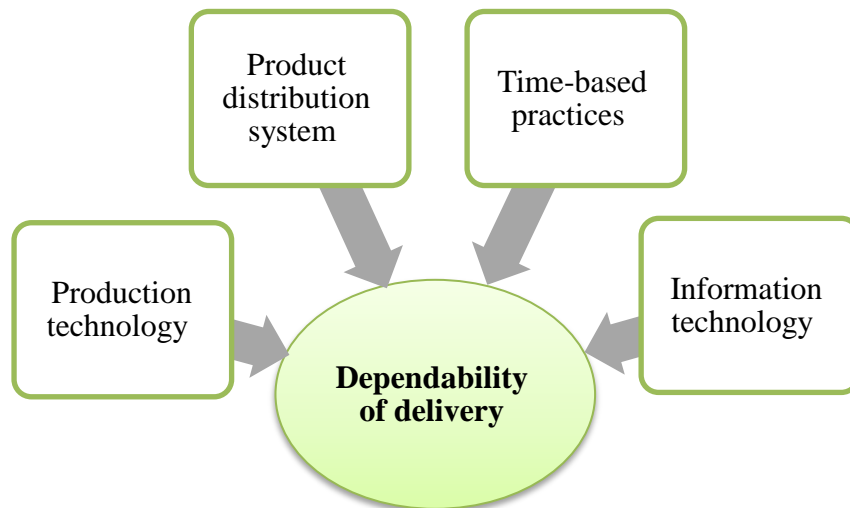
*“Operations department make production plans for resources according to the information of marketing personnel about market demand. The marketing group also makes sales plans depending on the historical information of sales taken into account the potential changes in the market.” (R14)*

### **5.3.1.3 Dependability of Delivery**

Most of the interviewees were aware of the critical role of marketing and operations interface in enhancing the ability of firms to achieve dependability of product delivery. This coincides with the arguments of many scholars in the literature (e.g., Droge et al., 2004; Kim et al., 2010; Lin et al., 2012; Nahm et al., 2003; Prabhaker, 2001; Sawney and Piper, 2002) who stressed the need for the convergence between marketing and operations functions to make deliveries quickly, through the adoption of time-based strategies. By analysing data, participants' perceptions are grouped as stated below (See Figure 5.9):

(I) Production technology (II) Product distribution system (III) Time-based practices, and (IV) Information technology

**Figure 5.9 Findings of interview question 3 "How do marketing and operations work together to achieve dependability of delivery?"**



### **I- Production technology**

There is a substantial body of research on marketing and operations integration that highlights the significant impact of the adoption of production technology by a firm on marketing capabilities of delivery (e.g., Crittenden et al., 1993; Kim et al., 2010; Nahm et al., 2003; Prabhaker, 2001). For example, many manufacturing organisations have succeeded in getting a product to market rapidly through utilising advanced manufacturing technologies, such as computer-aided manufacturing, and computer-aided design (Prabhaker, 2001). Accordingly, the importance of production technology to achieve the dependability of delivery was a frequent theme in this study. Therefore, the majority of respondents commented that utilizing high technology in factories enhances the ability of companies to compete against time as a result of reducing operations time, thus customers will be satisfied with delivery. This was clearly stated by participants:

*“To achieve the dependability of delivery, the production group needs to reduce time consumption of manufacturing processes in order to improve the ability of marketing personnel to deliver products to customers quickly. This can be attained by adopting advanced technological applications in the factories. For example, in my organization, the productivity increased and delivery time decreased when using new machines due to the high technology of these machines.” (R1)*

*“Operations group can be collaborative with marketing people in achieving dependability of delivery when the operations department compresses manufacturing time through the adoption of advanced technology such as using the computer in a production line. By this, productivity can be increased and customer demand can be met rapidly.” (R13)*

Some respondents emphasized that adopting advanced technology in production lines strongly contributes to a smooth and rapid flow of materials and information in factories by which the time consumed in designing and manufacturing product can be decreased, thus market demand will be satisfied more quickly. This is in line with Prabhaker (2001), and Stalk and Hout (1990), who argued that manufacturing time can be compressed when using high technology, because a product will flow smoothly between work stations in the factory, and delays will be avoided, thus achieving dependability of delivery. As participants commented:

*“Customers can receive their orders quickly or on time if the operations group produces these orders rapidly. This can be achieved when increasing the productivity by utilizing new technology in the plants. For example, computerising manufacturing machines through high technology contributes to avoiding the bottlenecks, breakdowns, and delays in production lines.” (R2)*

*“For improving delivery capabilities of firms, designing and manufacturing time should be reduced through automatic machines being utilized by the operations department, which use computer programmes to accelerate processes, thus delays will be avoided.” (R14)*

## **II- Product distribution system**

Some participants reported that an effective distribution system being adopted by marketing people significantly contributes to developing their competitiveness of delivery. They also stated that the simple and prompt procedures of distribution programme and utilizing distribution channels efficiently and adequately lead to reduced distribution time which is a part of delivery time, thus facilitating rapid deliveries. As indicated by Lin et al. (2012), and Tammela et al. (2008), the efficiency of distribution programmes and the adequacy of distribution channels can help marketing people to deliver products to their customers as promised or quickly. In this respect, respondents said:

*“The marketing group can be convergent with the operations personnel to achieve the dependability of delivery through distributing products quickly by using an effective distribution strategy in terms of procedures, communication, and performance of distributors. Furthermore, in order to deliver products to customers in a shorter time, the marketing department should use adequate distribution channels in the right places effectively.” (R7)*

*“The marketing department can work jointly with the operations function to develop the delivery performance of a firm through utilising an effective distribution programme by which products can be delivered quickly to customers. In this respect, implementing distribution procedures rapidly and simply as well as using adequate distribution centres can help to decrease delivery time, thus dependability of delivery.” (R17)*

As mentioned by Azzone et al. (1991), two interviewees illustrated that the ability of an organisation to achieve the dependability of delivery through the rapid supply of products by the operations group can be enhanced through an effective distribution programme of marketing department. As one of them commented:

*“Companies can achieve dependability of delivery when decreasing manufacturing time in the factory, but this advantage should be enhanced through using the distribution system of the marketing group effectively and adopting fast distribution procedures.”* (R8)

### **III- Time-based practices**

The majority of respondents presented evidence to suggest that marketing and operations people can achieve dependability of delivery through adopting a number of techniques by which time consumed in processes can be diminished. This theme was illustrated in the relevant literature; as stated by Lin et al. (2012), and Nahm et al. (2003), the use of time-based practices such as parallel activities by marketing and operations functional personnel underpins the ability of these two functions to be dependable in delivering products to their customers according to due dates. This can be seen clearly in the following data:

*“Marketing people depend on the operations group to make deliveries of products on time when accelerating processes and performing activities quickly in production lines. In addition, adopting an effective maintenance system for manufacturing machines plays an essential role in avoiding delays in delivery.”* (R4)

*“In order to attain the dependability of delivery, there is a need to reduce time consumption in production lines by the operations people. This can be achieved through eliminating unnecessary steps of manufacturing processes and avoid wasted time by adopting innovative design of processes and developing the performance of employees. This can contribute to developing the delivery capabilities of the marketing department.” (R13)*

#### **IV- Information technology**

As found by Bendoly et al. (2012), and Lin et al. (2012), the adoption of information technology can help marketing and operations groups to share their information in real time clearly and rapidly regarding the orders to be delivered quickly to customers. For example, using a laptop and internet between retailers and manufacturers to exchange information about any delay or change in orders contributes to delivering orders rapidly. Accordingly, this theme was demonstrated in this research by some participants, who stated that utilising information technology by marketing and operations functions for managing the information of orders can help firms to achieve the dependability of delivery. As respondents argued:

*“Due to the importance of information flowing quickly between marketing and operations functions to deliver products rapidly, adopting information technology by the two groups is critical to dealing with customers’ orders effectively and rapidly. For example, communicating information between distributors and manufacturers by using the internet or other applications of information technology contributes to delivering products quickly.” (R5)*

*“The delivery capabilities of firms can be improved when marketing and operations groups adopt information technology applications, for example using the applications of the internet by marketing and operations personnel for managing orders information between them effectively and quickly.” (R20)*

Some respondents mentioned that companies can achieve the dependability of delivery through increasing manpower, machines, and using a rewards system to increase productivity of plants, as a respondent stated below. However, this may conflict with the aim of the operations function, which is to reduce production costs. Furthermore, the development of delivery performance should not be associated with increasing these costs (Evans and Collier, 2007).

*“Dependability of delivery can be achieved if marketing and production groups work jointly to enhance their competitive capabilities together through increasing work hours and manpower in the factory, and using an effective reward system to increase productivity.” (R14)*

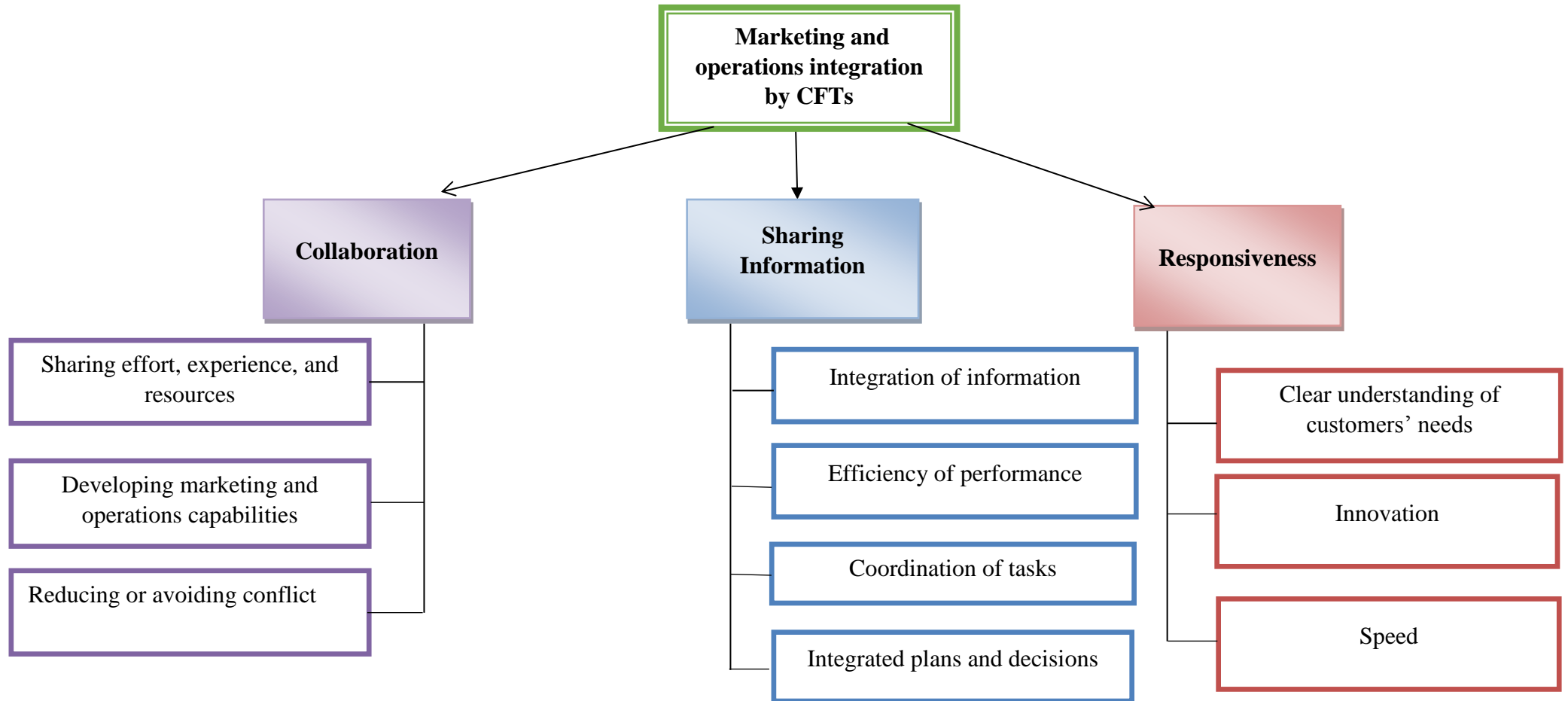


## ***Second phase: The Methods for achieving Marketing and Operations Integration***

### **5.3.2 Findings emerging from Research Question Two "How can the integration between marketing and operations functions be achieved by using CFTs?"**

The findings of interviews in the two case study organisations have identified many issues which reflect how the use of CFTs contributes to bridging the gap between marketing and operations functional areas. Through analysis of the data, these issues have been grouped into three categories: (I) Collaboration (II) Sharing information (III) Responsiveness, as set out in Figure 5.10.

**Figure 5.10 Findings of the second research question “How can the integration between marketing and operations functions be achieved by using CFTs?”**



### 5.3.2.1 Collaboration

The vast majority of respondents provided varied perceptions about the collaborative interactions among members of CFTs by which functional barriers between marketing and operations areas could be removed. These responses are consistent with many studies in the literature, such as Bendoly et al. (2012); Horwitz (2005); Shen (2002); Song & Swink (2002); Swink & Song (2007); Tsai & Hsu (2014); and Tang (2010). Through analysing collected data, the researcher divided participants' answers into three groups: (I) Sharing effort, experience, and resources (II) developing marketing and operations capabilities (III) Reducing or avoiding conflict. (See Figure 5.11)

**Figure 5.11 Findings of interview question 4 “How does Collaboration through CFTs influence the integration between marketing and operations?”**



## **I- Sharing effort, expertise, and resources**

As demonstrated in the literature, by using CFTs, the performance of marketing and operations members can be improved through the innovation when sharing their resources and experience to be valuable for both functions (Horwitz, 2005; Jassawalla & Sashittal, 2006; Song & Swink, 2002). As a result of this advantage of participating resources and expertise, the functional objectives of the two groups can be achieved leading to convergence between them (Bendoly et al., 2012; Swink and Song, 2007; Troy et al., 2008; Tsai & Hsu, 2014). Accordingly, most respondents seemed to agree that sharing resources and experience among people of CFTs has significant positive impact on marketing and operations relationship, as mentioned by interviewees:

*“In order to achieve the goals of CFTs, the departments of a firm allow members to use and share their diverse resources. This collaboration among different functions helps to remove functional boundaries between marketing and operations areas, thus the integration between the two groups can be attained. In addition, the relationship among members of CFTs such as marketing and operations personnel can be developed through sharing their resources.” (R7)*

*“As a result of the diversity of resources and experiences of CFTs, people of these teams will effectively be collaborating to benefit from this diversity through sharing their sources and experience among them. This sharing encourages marketing and operations to work together in order to improve their competitive capabilities.” (R14)*

As illustrated by Jassawalla & Sashittal, (2006), some respondents believe that sharing resources and expertise among members of CFTs can lead to innovation due to the experience they have gained. This can enhance the joint work of marketing and operations members and bridge the gap between them. As one respondent argued:

*“As a result of exchanging the expertise and knowledge among CFTs members, the experience of marketing and operations groups could be increased by learning more from this sharing. This contributes to the convergence between the ideas and views of marketing and production groups.” (R9)*

## **II- Developing marketing and operations capabilities**

Most participants presented evidence to suggest that using CFTs by an organisation contributes to improved marketing and operations capabilities becoming integrated as a result of the shared resources and joint work of members. This is consistent with the extensive research on CFTs that emphasizes the importance of the effective collaborative activities of CFTs to interface marketing with operations functions through combining and developing their competitive capabilities uniqueness (Hausman et al., 2002; Nath et al., 2010). As respondents said:

*“People of CFTs can be innovative due to the collaboration among them and their diverse expertise. As a result of this innovation, marketing and operations members can achieve the integration between their capabilities to be improved and directed towards achieving the firm's goals.” (R3)*

*“The collaborative activities of CFTs contribute to develop marketing and production competitiveness when members of the two functions share their efforts, sources and knowledge. Consequently, market demand will be satisfied by production sources of company, thus marketing and operations interface.” (R21)*

### III- Reducing or avoiding conflict

As stated by Hausman et al. (2002), and Tang (2010), the collaboration among members of CFTs to achieve specific common goals can reduce disagreements between marketing and operations personnel. This strongly needs a shared understanding of clear and common vision and goal by all people of CFTs in order to manage the diversity of their resources effectively (Horwitz, 2005). In keeping with this, some participants indicated that the collaborative interactions of CFTs are critical to avoid the conflict between marketing and operations members, so that they are able to direct their efforts and resources towards achieving the firm's goals. This is demonstrated well in the following data:

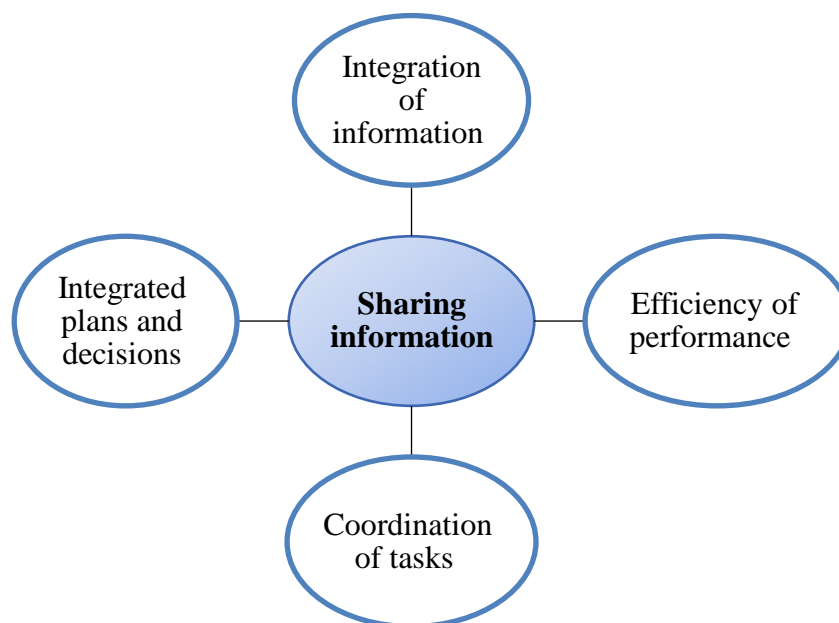
*“Despite marketing and operations people striving to achieve their functional objectives, they can work together within CFTs to attain the firm's goals through their collaboration. Through the clear and shared understanding of the goals and tasks of CFTs, all members can avoid the disagreements between them. In addition, good informal relationships can be generated among marketing and operations groups that positively impact their joint work.” (R2)*

*“The collaboration between members of CFTs contributes to achieving the objectives of marketing and operations functions through improving their experience and performance due to their diverse knowledge and backgrounds. As a result of these benefits, members of the two groups will be satisfied when they work together. This satisfaction of marketing and operations personnel can help companies to reduce or avoid disagreements among these people.” (R15)*

### 5.3.2.2 Sharing Information

According to the data from of the majority of respondents, it can be argued that sharing information among people of CFTs helps to achieve the convergence between marketing and operations functions. This is consistent with the research on CFTs such as Song and Montoya-Weiss (2001); Tang (2010); and Tsai & Hsu (2014) who mentioned that sharing information between marketing and operations members of CFTs is crucial to their joint work. Through analysing the data, the researcher grouped these responses into four categories: (I) Integration of information (II) Efficiency of performance (III) Coordination of tasks (IV) Integrated plans and decisions (See Figure 5.12).

**Figure 5.12 Findings of interview question (5) “How does information sharing through CFTs affect the relationship between marketing and operations?”**



## **I- Integration of information**

As mentioned in the literature, through exchanging information among people of CFTs, information from marketing and operations members could be integrated resulting in shared understanding of marketing and operational requirements, thus achieving the convergence between these two functions (Brettel et al., 2011; Kulp et al., 2004; Sharma, 2013; Tang, 2010). In keeping with this, most participants reported that the ability of marketing and operations groups to work together within CFTs can be improved through the integration of their information when members of these teams share their information between them. As interviewees commented:

*“Through sharing information between members of CFTs, the information held by marketing and operations groups will be integrated. As a result of this, operations personnel recognize customer preferences, and marketing people understand production resources, thus they can perform their tasks effectively. This can positively influence the collaborative activities such as marketing and production planning, and reduce disagreements between them.”* (R1)

*“One of the most important advantages of CFTs is the diverse and integrated information of members as a result of sharing their information between them. This can help these people, particularly marketing and operations groups to work together, thus removing their functional boundaries to become convergent.”* (R21)



## II- Efficiency of performance

As stated by most of the respondents, sharing information among people in CFTs can help to maximise the efficiency of marketing and operations performance due to their integrated information and shared understanding by which the two groups can perform their tasks clearly and successfully. These informants added that developing the performance of these people leads to closing the gap between them. This theme was illustrated in the relevant literature, as stated by Kulp et al. (2004); Horwitz (2005); and Tang (2010): exchanging information regarding market needs and operations requirements between members of CFTs, particularly marketing and operations personnel is critical for improving their performance when implementing their strategies to become integrated. This theme can be seen clearly in the following interview excerpt:

*“Due to the importance of the information regarding market and production resources information for both marketing and operations functions to implement their tasks, sharing this information between members of CFTs can lead to improve the performance of these two groups.”* (R7)

*“Sharing information through CFTs helps to develop performance of marketing and operations members because of the diversity of this information and its positive impact on the effectiveness of these teams. Furthermore, these two groups can implement their tasks effectively when exchanging their information due to the understanding and clarity of these tasks. This can positively influence marketing and operations relationship.”* (R20)

### III- Coordination of tasks

The relevant literature generally recognizes the essential role of sharing information among people of CFTs in achieving the coordination between marketing and operations members when they perform their tasks. This is because of the high interdependence of these tasks (Gattiker, 2007; Kulp et al., 2004; Tang, 2010). In keeping with this research, some respondents provided evidence to suggest that exchanging information among CFTs members strongly enables marketing and operations personnel to implement their tasks in a coordinated set, as respondents said:

*“Marketing and production departments depend on each other when performing their activities such as planning activities. Therefore, they need to share their information to be able to coordinate their tasks. Through the joint involvement of these two functions in CFTs, they can exchange their information and achieve the coordination of their tasks. Due to this coordination, the two groups can perform their activities rapidly and efficiently. Consequently, marketing and operations areas will be integrated.”* (R3)

*“Exchanging information among people from different departments of a company within CFTs can help them to reduce the errors and problems that may occur when they work together. Therefore, marketing and production members will be able to coordinate their tasks when implementing their strategies to be integrated.”* (R14)

#### **IV- Integrated plans and decisions**

As mentioned in the relevant literature, marketing and operations groups can make their plans and decisions together when sharing information among members of CFTs (Brettel et al., 2011; Kulp et al., 2004; Lee & Whang, 2000). This shared information helps to match marketing plans to production plans, thus achieving the integration between marketing and operations strategies (Cho & Lee, 2013; Tang, 2010). Consequently, this theme was mentioned by some respondents, who believe that the ability of marketing and operations personnel to make integrated plans and decisions could be enhanced through sharing information regarding market and operational requirements between people of CFTs. This is seen in the following data:

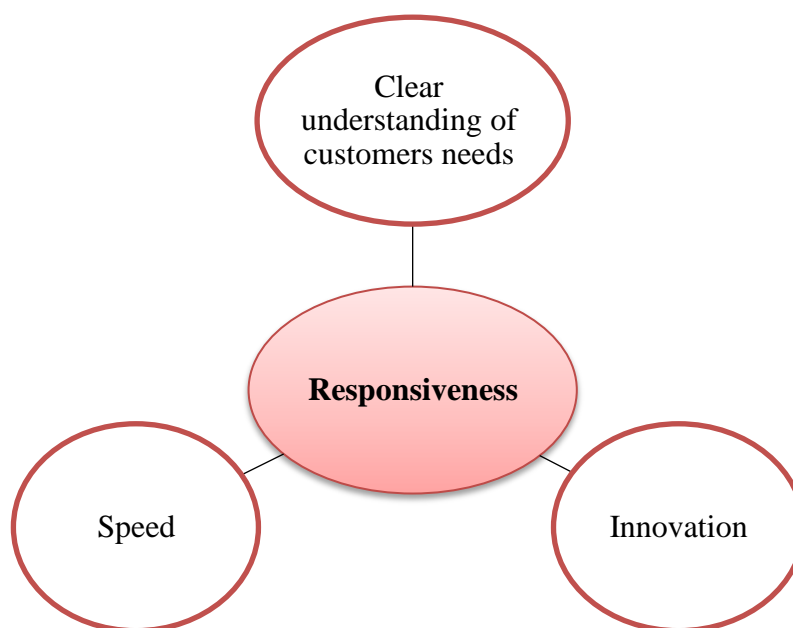
*“In my organisation, members of CFTs share their information about market demand and operations capabilities when they attend to their meetings to make plans and decisions for marketing and production resources. As a result of this diverse information, these plans and decisions could be integrated, thus avoiding disagreements that may happen between marketing and operations groups in this process.”* (R4)

*“Exchanging information among members of CFTs underpins the ability of marketing and operations members to implement their planning activities jointly to make joint plans and decisions. This is because of their shared and coordinated information and their understanding of market need and production facilities. As a result of this, the relationship between marketing and operations functions will be close.”* (R15)

### 5.3.2.3 Responsiveness

According to the findings of this research, the vast majority of interviewees have referred to the significant positive impact of using CFTs on the responsiveness of firms to market demand. Furthermore, they mentioned that this responsiveness relates strongly to the marketing and operations relationship. In keeping with this, there is a substantial body of research on how to satisfy market needs through adopting CFTs by which the integrated marketing and operations strategies can respond to market information rapidly (Brettel et al., 2011; Cho & Lee, 2013; Lin et al., 2012; Parker, 2003; Shen, 2002; Tsai & Hsu, 2014). Through analysing the data, the answers of participants have been categorised into three groups as follows: (I) Clear understanding of customers' needs (II) Innovation (III) Speed (See Figure 5.13).

**Figure 5.13 Findings of interview question 6 “How do CFTs influence responsiveness to information in order to meet customer needs? And how does this responsiveness affect the marketing and operations relationship?”**



## **I- Clear understanding of customers' needs**

As indicated by Brettel et al. (2011); Bunduchi (2009); Cho & Lee (2013); Droge et al. (2004); and Lee & Whang (2000), the majority of respondents stated that CFTs are able to understand their customers clearly due to their timely accurate information about market requirements. This accuracy and timing of information reduces misunderstanding and helps the operations group to meet market demand in terms of quantity and quality before competitors, thus interfacing marketing with operations. As interviewees said:

*“Identifying customers’ preferences can be accurate when using CFTs due to the ability of marketing members to gather correct information from the market place in good time. This is because of their close relationship with their customers. As a result of this, operations members can respond to market demand before competitors. This rapid responsiveness reflects the integration between marketing and operations functions.” (R5)*

*“By adopting CFTs, company can respond to market information quickly due to the accurate feedback of marketing members about customers’ needs and competitive products. According to this information, these teams can recognize customers’ opinions regarding their products and what they prefer in order to take effective actions to be satisfied.” (R17)*

## **II- Innovation**

The vast majority of participants demonstrated that companies can meet market demand through adopting CFTs by which innovative products can be developed to satisfy customers. They believe that this innovation results from sharing different expertise and knowledge among members, particularly marketing and operations people when they work jointly to develop new products. This is consistent with Bruns (2013); Bunduchi (2009); Chen (2007); Horwitz (2005); Jassawalla & Sashittal (2006); Song & Swink (2002); and Tsai & Hsu (2014)

who emphasized the importance of collaborative interactions between members of CFTs, especially marketing and operations groups, to exchange their various experience and backgrounds to benefit from the full value of this diversity for product innovation. As participants argued:

*“Through using CFTs, creative ideas can be generated when members exchange their diverse expertise and background for developing new products before competitors in order to satisfy customers. This responsiveness can positively impact the relationship between marketing and operations members as a result of achieving their functional objectives.” (R4)*

*“Different departments of a company can share their resources and efforts through the collaboration between their members within CFTs, in particular marketing and operations people, to be innovative when developing new product and process designs. This innovation can contribute to satisfying market demand through the two functions to be integrated.” (R19)*

As mentioned by Jassawalla and Sashittal (2006), and Mohsen & Eng (2013), some respondents pointed out that the experience of CFTs could be increased as a result of developing new products frequently. This increased experience enhances the ability of members to design innovative products and processes, by which customers' expectations can be met, thus facilitating the convergence between marketing and operations. For example, one participant said:

*“Marketing and operations members of CFTs can learn more about developing new products when they implement this process frequently. This learning can contribute to the increased experience and knowledge of these people, enabling them to be innovative in satisfying customers' preferences through the new products. This advantage underpins the joint work of marketing and operations functions.” (R7)*

### III- Speed

This theme was well illustrated frequently by the majority of participants who agreed that companies can produce and deliver products to customers quickly when using CFTs in order to respond to market demand before competitors. They believe that this rapid responsiveness closes the gap between marketing and operations functions. This coincides with Daspit et al. (2013); Lovelace et al. (2001); Parker (2003); Shen (2002); and Tsai & Hsu (2014), who indicated that due to the ability of CFTs members to reduce production and delivery time by their time-based practices, firms can satisfy customers through the fast delivery of products, thus exploiting the convergence between marketing and operations departments. As respondents commented:

*“Due to the innovation of CFTs members, they can compress manufacturing time through the innovative design of product and process by which non-valuable steps can be eliminated. Therefore, firms can meet market demand quickly when utilizing CFTs. This responsiveness leads to an interface of marketing with operations.”* (R6)

*“For rapid responsiveness, CFTs adopt a number of practices such as computer aided design to produce and deliver product to customers quickly and before competitors”.* (R14)

*“The collaboration and coordination between members of CFTs help them to perform their tasks rapidly through adopting practices such as implementing their activities concurrently. As a result of this, production time will be decreased, thus customers will receive their orders quickly. This rapid responsiveness helps to motivate marketing and operations members to become convergent.”* (R15)

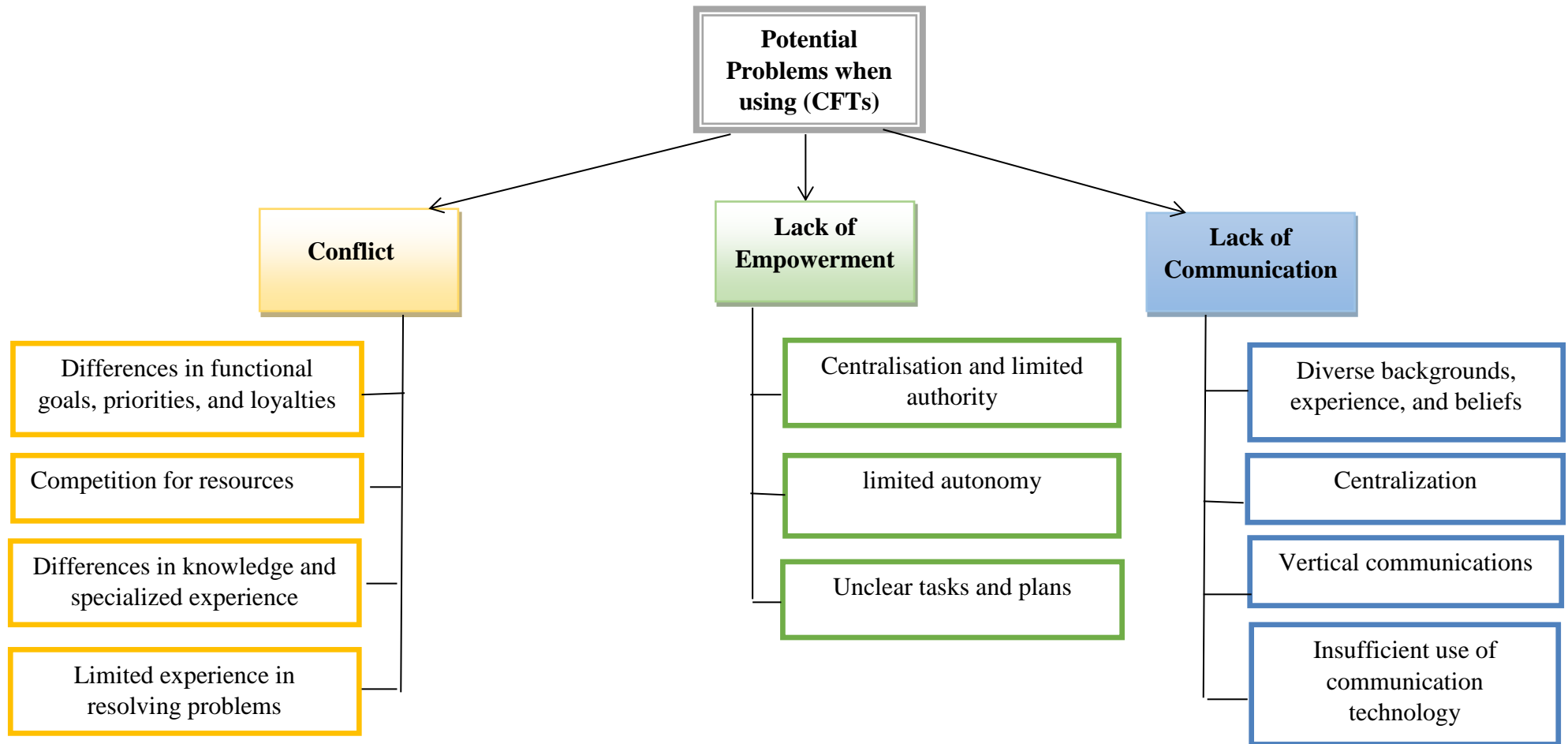
### ***Third phase: The Development of Marketing and Operations Integration***

#### **5.3.3 Findings emerging from Research Question Three "What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?"**

The drawbacks of using CFTs were highlighted by respondents in both case study organisations A and B through identifying the potential problems that may occur when marketing and operations members work together within CFTs. According to analysis of the data, these problems are summarised and divided into three groups, namely conflict, lack of empowerment, and lack of communication (See Figure 5.14).



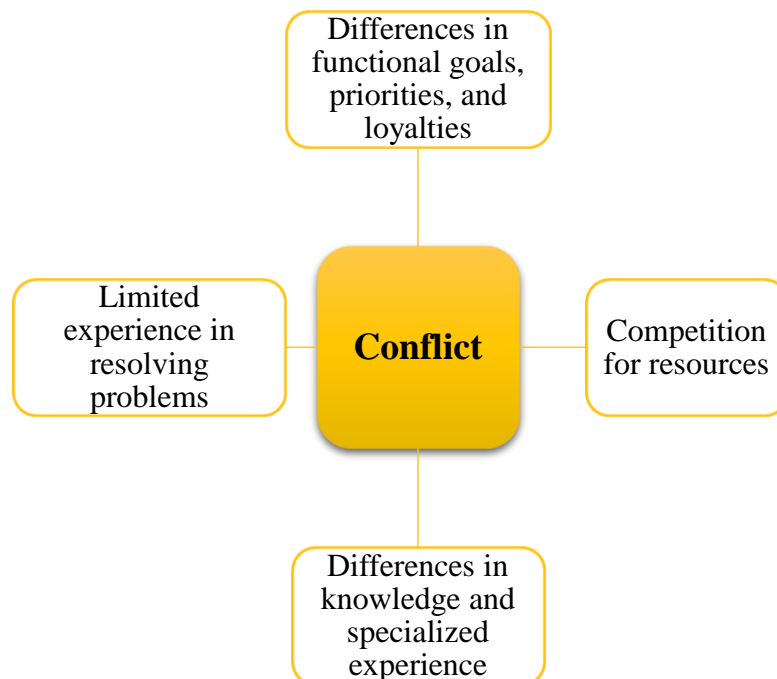
**Figure 5.14 Findings of third research question, “What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?”**



### 5.3.3.1 Conflict

As consistent with a number of scholars, such as Calantone et al. (2002); Chen (2007); Daspit et al. (2013); Holland et al. (2000); Kotlarsky et al. (2015); Lalsing et al. (2012); Parker (2003); and Piercy (2007), the study found agreement among the vast majority of respondents that the relationship between members of CFTs can be problematic due to their potential disagreements. They perceived many aspects of this conflict which have been categorised through analysing data into four groups: (I) Differences in functional goals, priorities, and loyalties (II) Competition for resources (III) Differences in knowledge and specialized experience (IV) Limited experience in resolving problems (See Figure 5.15).

**Figure 5.15 Findings of interview question 7 “How do you view the relationship between members of CFTs in your organisation?”**



## **I- Differences in functional goals, priorities, and loyalties**

In line with the literature, which highlights the different functional aims and priorities of CFTs members as a common impediment to these teams (Calantone et al. 2002; Chen 2007; Holland et al. 2000; Lalsing et al. 2012; Parker 2003; Piercy 2007), the majority of participants contended that disagreements may occur among people in CFTs, in particular between marketing and operations groups. These respondents stated that despite the good relationship of members, the focus on their functional objectives and responsibilities more than on firm's goal can lead to conflict. As interviewees stated:

*“.....Conflict may happen between marketing and operations members when they make a decision on pricing because the increase in production costs leads to high prices, while the marketing group prefers low prices.”* (R1)

*“.....Disagreements may occur because marketing personnel tend to make some changes in the characteristics of a product while operations members are not enthusiastic about these modifications, wishing to avoid the changes in production lines and the increase in production costs.”* (R16)

## **II- Competition for resources**

Some respondents reported that members of CFTs may compete against each other to gain more resources such as financial and human resources in order to achieve their departmental objectives. They believe that this competition leads to disagreements between these people, which impact negatively their relationship and the effectiveness of CFTs. This is consistent with Hill (2005); Holland et al. (2000); Malhotra and Sharma (2002); Parker (2003); and Piercy (2007), who demonstrated that the competition among members of CFTs for resources can be a resource of conflict. For example, respondents 10 and 17 demonstrated that in their companies, the relationships among people of CFTs are good due to their collaborative activities and the right choice of them. But, in some situations, disagreements occur because

of the competition between these members such as marketing and operations groups especially for the limited resources such as financial resources. They believe that the reason for this competition is to be successful in achieving their functional priorities.

As stated by Piercy (2007), the competition between marketing and operations members could occur due to the support from other functions of a company on which the two groups depend to attain their functional objectives. In connection with this, a minority of interviewees mentioned to this support, such as respondent 5 who argued that some departments of firm can indirectly become involved in the competition between marketing and operations groups when they support marketing or operations functions for resources.

### **III- Differences in knowledge and specialized experience**

As contended by Daspit et al. (2013); Horwitz (2005); Kotlarsky et al. (2015); Majchrzak et al. (2012); and Parker (2003), despite the advantages of the varied knowledge and specialized experience of CFTs members, this diversity can lead to obstacles to communication that cause conflict among them. This is because of misunderstanding and the conflicting opinions of these people. Consequently, some respondents referred to the disagreements that may happen between CFTs members when they discuss some issues, due to their various background and experience. As respondents argued:

*“..... they sometimes have conflicting views when they discuss some issues or decisions with each other, due to their various experiences. Therefore, disagreements sometimes occur between these people, in particular marketing and operations personnel.”* (R4)

*“The relationships among people of cross-functional teams are good, but sometimes, they disagree with each other on some issues due to the variation in their views on how to deal with these issues such as advertising. This difference in their opinions is because their varied knowledge and expertise may cause misunderstanding.”* (R17)

#### **IV- Limited experience in resolving problems**

Some respondents emphasized the importance of the ability of CFTs members to tackle their problems to avoid the conflict that may occur between them due to these problems. This is consistent with Daspit et al. (2013); McDonough (2000); Parker (2003); and Piercy (2007), who argued that disagreements among people of CFTs could happen if they are not able to deal with their problems effectively through their diverse experiences and knowledge. Therefore, the limited experience of CFTs to solve their problems could be a main impediment to these teams because of its significant negative effect on their effectiveness. This is clearly demonstrated by participants:

*“In my organisation, there is a good relationship between members of cross-functional teams. However, sometimes this relationship might be problematic when these people spend a long time to resolve their problems, such as the problems of marketing and operations people causing disagreement.”* (R20)

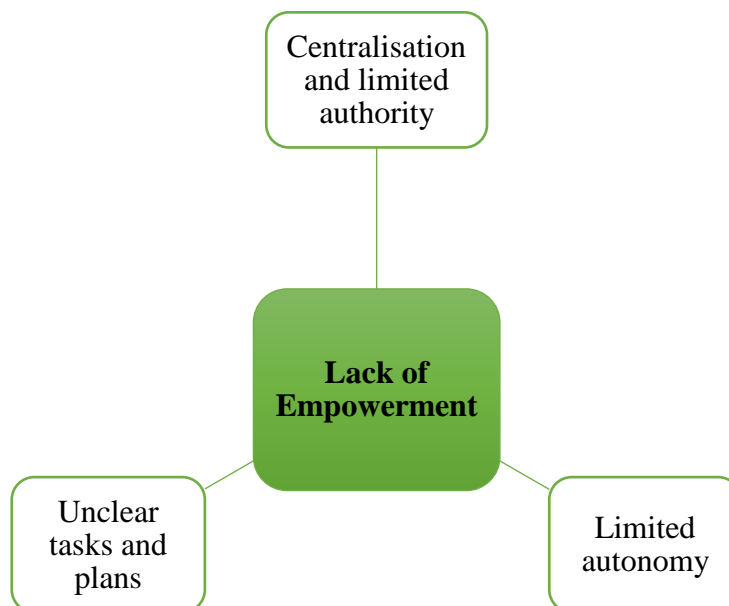
*“I think that in my company, there is close informal relations between people of cross-functional teams, but they should be able to solve their problems through their experience in order to avoid the conflict that can be resulted from these problems.”* (R10)

However, a minority of respondents mentioned that there is no conflict within these teams. For instance, respondent 13 stated that because of the close informal relationships and mutual trust between members of CFTs, disagreements cannot occur, and these people are able to resolve any problem that may face them.

### 5.3.3.2 Lack of Empowerment

There is a substantial amount of research illustrating that CFTs can be effective if they are empowered in terms of freedom and flexibility, autonomy, and authority. But the lack of empowerment could be a greatest impediment to CFTs because of its significant negative influence on the effectiveness of these teams (Bidault & Cummings, 1994; Chen et al., 2015; Chen, 2007; Henke et al., 1993; Holland et al., 2000; Parker, 2003; Tata & Prasad, 2004; Yang & Ok Choi, 2009). Therefore, this theme as a major obstacle to CFTs was emphasised frequently by the vast majority of respondents. They believe that CFTs in their companies need to be empowered to be more effective. According to analysis of the data, perceptions of interviewees about the lack of empowerment have been grouped into three categories: (I) Centralisation and limited authority (II) Limited autonomy (III) Unclear tasks and plans (See Figure 5.16).

**Figure 5.16 Findings of interview question 8 “How do you view the authority and autonomy of CFTs in your company?”**



## **I- Centralisation and limited authority**

The vast majority of interviewees reported that CFTs have limited authority because of the centralisation in making important decisions by the top management of the company and the industry ministry. Therefore, these teams need to be granted more authority to be more effective when performing their tasks or projects. This finding is consistent with many articles in the literature, such as Chen et al. (2015); Chen (2007); Henke et al. (1993); Holland et al. (2000); and Parker (2003), who contended that due to the centralization of the organizational structure of the company, the coordination and making of decisions to resolve problems happen at high managerial levels. But CFTs members cannot make these decisions due to their limited authority. For instance, respondent 5 and 18 stated that in their organisations, CFTs are granted limited authority to make decisions, in particular the important decisions, such as decisions on importing new production machines because this requires obtaining consent from the top management and sometimes from the industry ministry. Furthermore, they added that granting authority to these teams is related to the instructions of top management and industry ministry. However, some respondents stated that in their companies, CFTs have an authority to make and implement their decisions.

## **II- Limited autonomy**

Most participants stated that sometimes other departments of the firm from outside CFTs attempted to intervene in performing the activities of these teams in order to achieve their functional priorities and objectives. Therefore, in these cases, the performance of members can be influenced by other parts of the organisation. This is consistent with the literature, which notes that lack of autonomy is the greatest impediment to CFTs when the managers from other departments of company try to meddle in the tasks of these teams or their decisions (Holland et al., 2000; Parker, 2003; Yang & Ok Choi, 2009). This is shown in the following comments:

*“In my company, cross-functional teams have the autonomy to implement their tasks, but in some situations, managers of other departments from outside these teams attempt to impact the decisions of CFTs for functional priorities.” (R6)*

*“I think that CFTs in my organisation perform their activities and projects without any pressure from other departments. However, sometimes some of these departments make suggestions to be adopted by CFTs for developmental purposes.” (R17)*

However, some other participants such as respondent 1 commented that CFTs have autonomy to perform their tasks without any impact from other departments of the organisation.

### **III- Unclear tasks and plans**

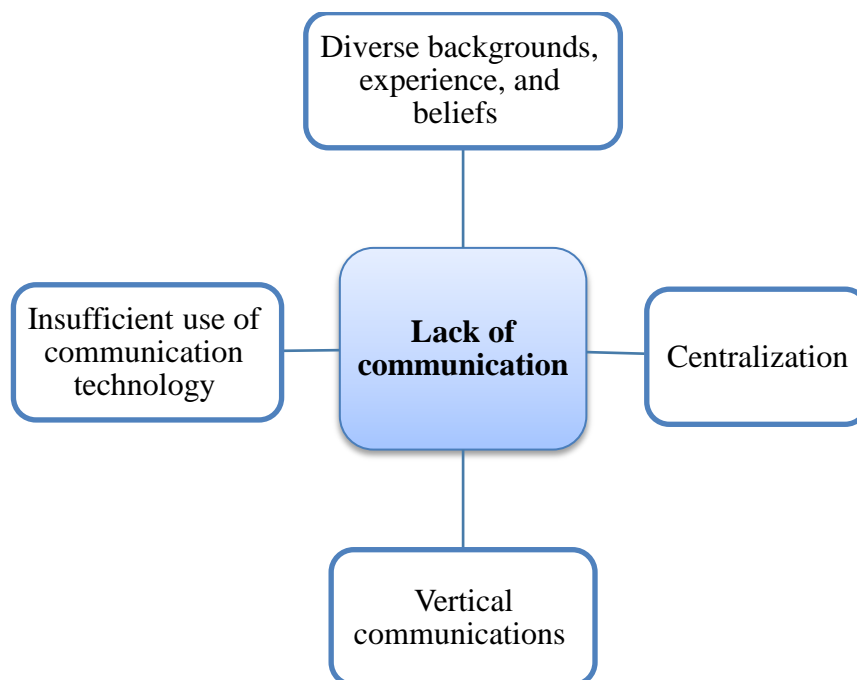
As demonstrated by Chen (2007); Moon & Swaffin-Smith (1998); Parker (2003); and Yang & Ok Choi (2009), the use of accurate and sufficient information is very important for CFTs to perform their tasks and clarify their plans and decisions. This clarity enhances the ability of these teams to make correct decisions and to implement their task more effectively. Consequently, some respondents seemed to agree that having clear plans and tasks is critical for CFTs to be empowered by the management of company in terms of making decisions and performing tasks. In this respect, participant 8 reported that in some cases, the management of the company intervenes in making plans and decisions by CFTs if these plans and decisions are unclear, particularly when there is a lack of information. This is because of the essential role of information in making clear plans and correct decisions. In addition, as observed by respondent 11, people from outside CFTs may indirectly be involved in these teams to provide the support for members when they lack information to perform their tasks effectively and make their decisions.



### 5.3.3.3 Lack of Communication

As reported in the literature, communication between CFTs members and with the other parts of the company is crucial to perform their tasks effectively and rapidly. Therefore, the lack of communication strongly and negatively impacts the effectiveness of CFTs (Horwitz, 2005; Holland et al., 2000; Kotlarsky et al., 2015; Lalsing et al., 2012; Lovelace et al., 2001; Nguyen and Rukavishnikova, 2013). In keeping with this research, the majority of respondents provided evidence to suggest that communication of CFTs can be problematic because of many aspects. Through analyzing the data, the researcher grouped these aspects into four categories: (I) Diverse backgrounds, experience, and beliefs (II) Centralization (III) Vertical communications (IV) Insufficient use of communication technology (See Figure 5.17).

**Figure 5.17 Findings of interview question 9 “How do you view the communications among the members of CFTs and with other parts of your organisation?”**



## **I- Diverse backgrounds, experience, and beliefs**

As demonstrated by other researchers such as Horwitz (2005); Kim et al. (2006); Kotlarsky et al. (2015); Lovelace et al. (2001); and Majchrzak et al. (2012), some respondents contended that the diverse specialized expertise and knowledge of CFTs members can lead to obstacles to communication between them. This is because of misunderstanding and conflicting views which may happen when communicating information and ideas among these people. As interviewees argued:

*“Communication between people of cross-functional teams in my organisation is good because of the use of telephone, mobile phone, and email. However, due to the different expertise and background of members, sometimes these teams face problems of misunderstanding, which negatively impact their communication.”*  
(R4)

*“.... But in some cases, due to the diverse knowledge of cross-functional teams’ members, they face a difficulty to communicate their information and ideas between them, because of misunderstanding.”* (R13)

## **II- Centralization**

Some interviewees referred to the centralisation of communication as a significant problem that may occur when people of CFTs communicate their information, ideas, and opinions to each other unequally. In connection with this finding, Moenaert et al. (1994); and Nguyen and Rukavishnikova (2013) argued that centralization negatively impacts the communication of CFTs because of the unequal distribution of the required information among members. As a result of this, CFTs will be unable to benefit from the full value of the diverse experience and knowledge of members. For example, respondents 2 and 17 referred to the effectiveness of communication among members of CFTs and with other departments in their organisations. However, they added that sometimes, the focus of these teams or their leadership is on some

members, particularly operations group, more than others when sharing information and ideas, thus causing overloaded information of operations personnel while other members lack this information.

### **III- Vertical communications**

As pointed out by other scholars, such as Chen (2007), and Nahm et al. (2003), a minority of respondents presented evidence to suggest that the effectiveness and speed of communication between members of CFTs could be increased due to the horizontal nature of this communication. However, because of the vertical communication between CFTs and other parts of the company, the effectiveness of these teams can negatively be influenced. As interviewees demonstrated:

*“Despite using horizontal communication among members of cross-functional teams, vertical communication is still used between these teams and other departments due to the hierarchy of my company.”* (R10)

*“Some of the communication between cross-functional teams’ members and with other parts of my firm is vertical according to its organizational structure, which takes more time and negatively affects the accuracy of information and ideas.”*  
(R15)

#### **IV- Insufficient use of communication technology**

The majority of participants contended that their companies do not adopt technological applications for communications of CFTs adequately to become more rapid and effective. This is consistent with the literature which emphasised the importance of using communication technology to share ideas and information quickly and accurately between people of CFTs. Consequently, the effectiveness of communications could negatively be impacted when a company does not utilise communication technology sufficiently (Bharadwaj, 2000; Chen, 2007; Leenders et al., 2003; Lovelace et al., 2001). This is seen in the following statements:

*“My organisation uses the internet for communication, but this use is inadequate because of its limited facilities and the need for training members of cross-functional teams on the applications to be able to utilize it more effectively.”*  
(R5)

*“In my organisation, there is a limited use of communication technology by cross-functional teams despite their use of the internet, but it should be developed by utilizing more applications and facilities.”* (R15)

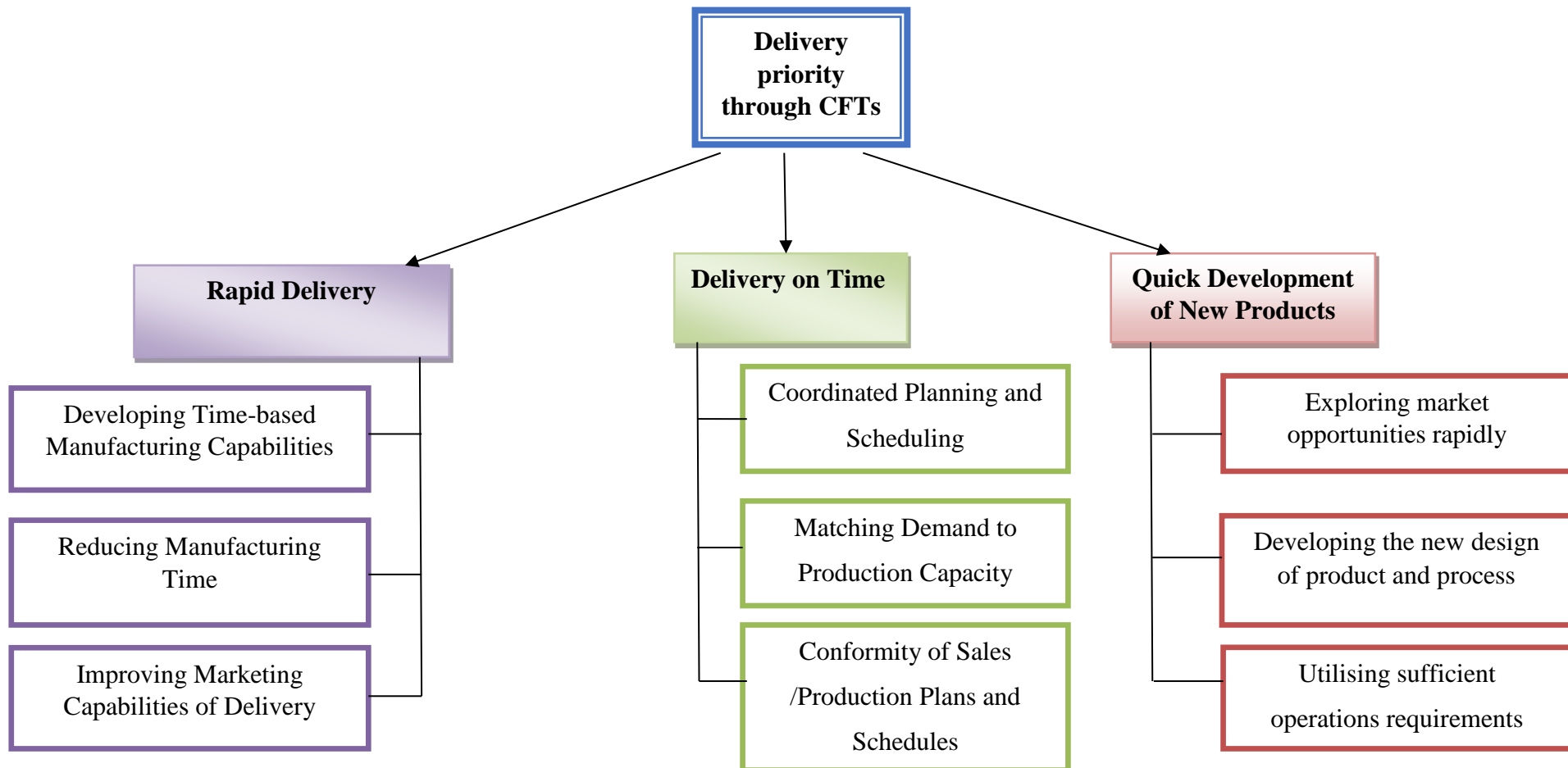
However, a minority of participants argued that communication between members of CFTs and with other departments of his organisation is effective, and they did not mention any weaknesses in this respect.

#### ***Fourth phase: The achievement of product delivery priority***

##### **5.3.4 Findings emerging from Research Question Four “How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?”**

The contributions of using CFTs to deliver products at minimum time and before competitors were explained through the perceptions of interviewees in both case study organisations A and B. Through analysing the data of the fourth research question, the researcher grouped these perceptions into three categories: (I) Rapid delivery (II) Delivery on time (III) Quick development of new products (See Figure 5.18).

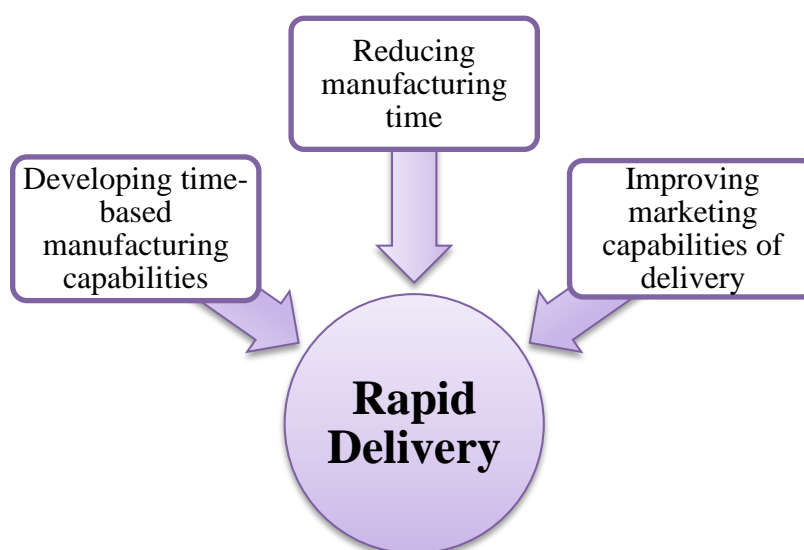
**Figure 5.18 Findings of the fourth research question “How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?”**



#### 5.3.4.1 Rapid Delivery

As stated by Droge et al. (2004); Ernst (2002); Gemser & Leenders (2011); Hum & Sim (1996); Lovelace et al. (2001); Prabhaker (2001); Santa et al. (2010); Spanner et al. (1993), and Schroeder, 1989), setting up CFTs is one of the most important time-based strategies that enhances the ability of manufacturing companies to deliver products quickly to their customers, particularly with the production for inventory system “Make-to-stock”. In keeping with this literature, the majority of respondents provided evidence to suggest that activities performed by members of CFTs together contributes to reducing time-consuming processes, thus ensuring rapid delivery of products. This evidence was embodied in their answers that have been categorised into three groups: (I) Developing time-based manufacturing capabilities (II) Reducing manufacturing Time (III) Improving marketing capabilities of delivery (See Figure 5.19).

**Figure 5.19 Findings of interview question 10 “According your view, how can delivery time be impacted by using CFTs in your company?”**



## **I - Developing time-based manufacturing capabilities**

Many authors such as Droge et al. (2004); Gemser & Leenders (2011); Nguyen & Rukavishnikova (2013); Santa et al. (2010); and Shen (2002) emphasised the importance of utilising CFTs to increase speed to market due to their contribution to improving time-based production capabilities such as innovative technology. Consequently, most respondents seemed to agree that CFTs play an essential role in developing operations capabilities and facilities towards reducing time consumption in manufacturing processes. They believe that CFTs can improve unique manufacturing capabilities through rapid information and materials flow along the production lines. As respondents said:

*"As a result of exchanging knowledge and experiences of CFTs, they can be innovative in improving production resources to manufacture products quickly when making correct decisions on these resources such as technology in due course jointly. For example, CFTs made the decision on updating the technology of the production line in the weaving stage, and they obtained the consent of top management and industry ministry to import new weaving machines. This decision led to increased productivity and reduced delivery time."* (R4)

*"By using CFTs, the factory can improve production capabilities such as the effective communication by which information can be followed quickly throughout the production lines. This can help to satisfy market demand through rapid delivery. "* (R13)



## II- Reducing manufacturing time

As reported in the literature, using CFTs by manufacturing companies strongly contributes to compressing time consumption in operations through adopting time-based applications such as innovative design of product and process (Droge et al., 2004; Ernst, 2002; Gemser & Leenders, 2011; Hum & Sim, 1996; Spanner et al., 1993; and Stalk and Hout, 1990). In keeping with this research, the majority of interviewees referred to the ability of CFTs to decrease manufacturing time by their collaborative and innovative practices such as parallel activities. For example, some respondents commented:

*"Using CFTs effectively can positively impact delivery time. This is because of the ability of these teams to compress time consumption in manufacturing processes through performing many activities concurrently when designing and implementing these processes."* (R2)

*"As a result of the innovation of CFTs due to their diverse experience, they can redesign product and process in order to eliminate non-valuable activities. This innovative design of product and process helps to decrease manufacturing time of products to be delivered quickly to customers."* (R14)

As pointed out by other researchers such as Dayan and Basarir (2010); and Park et al. (2009), a minority of respondents demonstrated that resolving problems of production planning early by CFTs can help to avoid delays in manufacturing products being delivered rapidly to customers. As one of them said:

*"Adopting CFTs can support the competitiveness of the company to deliver products quickly to customers because of the ability of these teams to deal with production problems rapidly. These problems can be revealed and tackled early by members of CFTs together due to their shared information and coordination."*  
(R3)

### III- Improving marketing capabilities of delivery

As mentioned in the literature, marketing capabilities of delivery could be improved through the integration between marketing and operations members of CFTs (Droge et al., 2004; Ernst, 2002; Kim et al., 2010; Lin et al., 2012; Prabhaker, 2001). To achieve this interface, the marketing group should benefit from the advantage of reducing manufacturing time through using marketing programmes effectively, such as a distribution system (Tammela et al., 2008; Lin et al., 2012). In connection with this, some interviewees stressed the importance of adopting marketing strategies efficiently and adequately such as an effective distribution programme and adequate distribution channels to deliver products rapidly. This is seen in the following data:

*"Marketing members of CFTs can develop their ability to deliver products rapidly to customers through the effective distribution of products in terms of procedures and the efficiency of employees. Furthermore, in order to deliver products in the right market location quickly, there is a need for utilising sufficient distribution channels in the markets." (R1)*

*"Due to the close relationship of CFTs with their customers, and their increased experience about the market, they can use distribution channels effectively in the right places into the target markets in order to facilitate the delivery process of products to their customers rapidly." (R15)*

Like Spanner et al. (1993); and Ernst (2002); a minority of interviewees stated that adopting an integrated information system by operations and marketing members of CFTs helps to avoid delays in delivering products to the customers. This can help them to deal with the huge amount of orders information effectively and quickly, thus improving the delivery capabilities of the marketing group. For example, one of these respondents commented:

*"Through using CFTs, the company can achieve the competitive advantage of fast delivery through managing and processing the information of marketing and operations efficiently when the two groups use an effective information system jointly, thus developing the delivery capabilities of the marketing department."*  
(R6)

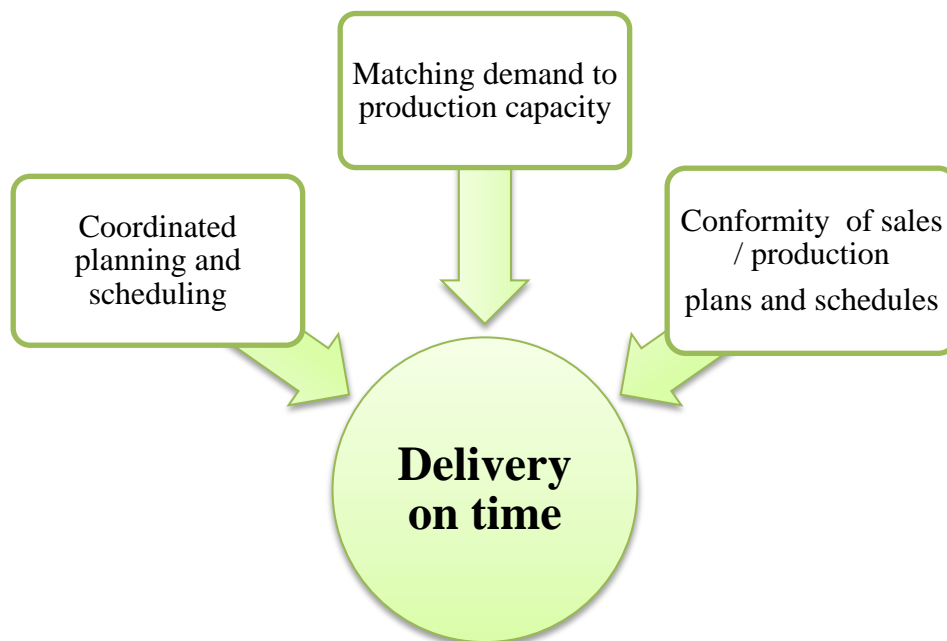
Some participants argued that their companies strive to develop the delivery performance of the marketing department through the decision of CFTs on sharing their sales centres to share their advantages in this respect, as one respondent said:

*"One of the important decisions of CFTs is the decision on developing the distribution system by sharing sales centres among factories of the company and with other companies in the Iraqi public textile sector."* (R9)

#### **5.3.4.2 Delivery on Time**

As pointed out by other researchers such as Olhager et al. (2001); Kaipia (2008); Karim et al. (2010); Keller (2001); Santa et al. (2010); Schroeder (1989), and Tang (2010), there was agreement among the vast majority of respondents that the joint work of marketing and operations members within CFTs underpins the ability of the firm to meet the delivery due dates as promised, in particular with the production for inventory system "Make-to-order". They perceived many contributions of utilising CFTs to delivering products on time which have been grouped through the analysis of data into three categories: (I) Coordinated Planning and Scheduling (II) Matching demand to production capacity (III) Conformity of sales /production plans and schedules (See Figure 5.20).

**Figure 5.20 Findings of interview question 11 “In your opinion, how can products be delivered on time through adopting CFTs in your organisation?”**



### **I- Coordinated planning and scheduling**

As stated by Keller (2001), Santa et al. (2010), Sharma (2013), and Tang (2010), the majority of respondents provided evidence to suggest that the ability of manufacturing organisations to meet their delivery promises could be enhanced through the coordination between marketing and operations people when making their plans and schedules jointly within CFTs. As interviewees said:

*"Because of the integrated information and knowledge of CFTs about market demand and production requirements, marketing and operations members can make their plans and schedules jointly to be coordinated. As a result of this, customers' orders can be shipped when promised."* (R5)

*"Through sharing and coordinating information of marketing and operations members of CFTs, they can perform their planning activities together to be integrated. As a result of this, errors and variations that may occur when implementing marketing and production plans can be reduced. Therefore, they can avoid the delays in delivering products to the customer."* (R17)

As mentioned by Gattiker (2007); and Sharma (2013), a minority of participants stated that due to the ability of CFTs to share and process their information effectively and quickly when making their plans and schedules, customers' orders and inventory can be managed efficiently enabling the marketing group to deliver products according to the due dates. As one interviewee commented:

*"Through the coordinated planning of operations and marketing groups within CFTs, the company can satisfy their customers by delivering their orders on time. This is because of the positive impact of this planning on managing inventory and demand."* (R1)

As mentioned by Tang (2010), some participants stated that as a result of the joint planning of marketing and operations within CFTs, they will be able to resolve production scheduling problems together. This can help to avoid the delays in implementing production schedules. Consequently, firms can achieve delivery reliability. As one interviewee said:

*"The effective use of CFTs contributes to gaining customers' loyalty through the reliability of delivery. The reason for this is the ability of CFTs to resolve production schedules problems that may cause delays in delivering products to customers. These problems can be tackled rapidly by using these teams through the coordination and their varied expertise and knowledge."* (R3)

## **II- Matching demand to production capacity**

As stated in the relevant literature, predicting the demand and production capacity can be more accurate when implementing this process by CFTs, due to the coordination and integrated information of members, in particular marketing and operations groups (Berglund et al., 2011; Keller, 2001; Olhager et al., 2001; Song & Swink, 2002; Tang, 2010; Tavares Thome et al., 2012). Consequently, this theme was demonstrated frequently by some respondents. They argued that implementing planning processes such as forecasting sales and identifying production capacity by marketing and operations members of CFTs jointly contributes to delivering products to customers on time. As participants argued:

*"Adopting CFTs can help firms to avoid the delays in delivering products to their customers as a result of the accurate sales forecasting by which production capacity can be determined correctly. This is because of the shared information and knowledge of marketing and operations members." (R11)*

*"Exchanging various experiences and knowledge among marketing and operations members of CFTs regarding market demand and production capacity can lead to reduced errors and variations in predicting demand. This can help them to determine production capacity correctly. Consequently, firms can achieve the balance between demand and supply, thus orders can be shipped on time." (R18)*

## **III- Conformity of sales / production plans and schedules**

As many studies mentioned such as Ambrose (2015); Karim et al. (2010); Keller (2001); and Tavares Thome et al. (2012), most participants contended that making plans and schedules of sales and production by marketing and operations members of CFTs together significantly contributes to fulfilling delivery promises punctually. This is because of the accurate information and coordination of the two groups by which their plans and schedules can be consistent with each other. As seen in the following data:

*"The joint work of CFTs to make plans and schedules of sales and production by marketing and operations members can lead to reduced variations between their plans and schedules. As a result of this conformity, the problems and delays that may occur when implementing the plans and schedules of the two groups can be reduced, thus customers will receive their orders as promised."* (R7)

*"The delivery reliability as a major competitive advantage of the company can be developed when using CFTs to make plans and schedules of sales and production by marketing and operations members jointly. This is because of the ability of these people to exchange accurate information and coordinate their planning activities effectively in this process."* (R15)

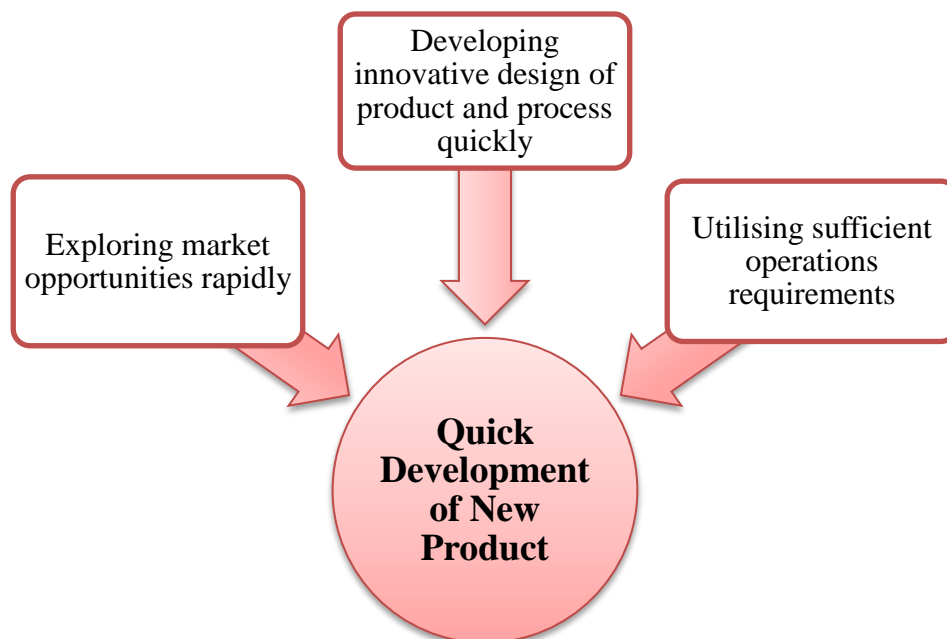
Some respondents mentioned that due to the use of integrated information systems by CFTs to share and process their information efficiently and rapidly, plans and schedules of sales and production that are made by marketing and operations groups can be well-matched. However, they referred to the need for utilising integrated information system in their companies. This is consistent with Ambrose (2015), and Chen (2007), who emphasised the importance of using integrated mechanisms such as information systems for processing orders information by CFTs to be able to ship customer orders when promised. As one interviewee said:

*"To develop the competitiveness of the company in delivering products to their customers on time, there is a need to adopt an integrated information system to deal with the shared information of CFTs effectively for more coordinated planning. This coordination is critical to attain the fit between sales and production plans and schedules."* (R5)

### 5.3.4.3 Quick Development of New Products

There is an extensive body of NPD literature highlighting the essential role of using CFTs effectively in reducing NPD time (Calantone et al., 2002; Daspit et al., 2013; Dayan and Basarir, 2010; Droge et al., 2004; Gemser & Leenders, 2011; Menon et al., 2002; Park et al., 2009; Sherman et al., 2005). Consequently, the vast majority of the interviewees seemed to agree that utilising CFTs contributes to implementing NPD processes successfully and rapidly through their collaboration and innovation. They provided many arguments regarding the contributions of CFTs to developing new products frequently and quickly. Through analysing the data, the findings have been categorised into three groups: (I) Exploring market opportunities rapidly (II) Developing innovative design of product and process quickly (III) Utilising sufficient operations requirements (See Figure 5.21).

**Figure 5.21 Findings of interview question 12 “How does the use of CFTs in your company influence new product development time?”**





## **I- Exploring market opportunities rapidly**

As many researchers, such as Bendoly et al. (2012); Brettel et al. (2011); Bunduchi (2009); Droge et al. (2004); and Sherman et al. (2005) mentioned, the vast majority of respondents highlighted the ability of CFTs to gain valuable information in good time regarding customers' expectations and competitors' actions from the market place. By this information, CFTs explore market opportunities before competitors to develop new products frequently and rapidly. As participants commented:

*"Due to the close relationship between CFTs and customers, and the effective market research of these teams, they can determine customer preferences accurately and rapidly. This can help to underpin the ability of CFTs to satisfy market needs before competitors."* (R6)

*"As a result of the effective market research of CFTs, they can obtain accurate information about customers' preferences and competitive products to explore good opportunities to meet customers' expectations before competitors. As an example of the collaboration between CFTs people in this respect, in many cases, marketing and operations members go together to the market place in order to gather information."* (R18)

## **II- Developing innovative design of product and process quickly**

In keeping with the NPD literature, which sheds light on the significant contribution of CFTs to design new product and process rapidly through their innovation (Bunduchi, 2009; Calantone et al., 2002; Daspit et al., 2013; Dayan and Basarir, 2010; Park et al., 2009; Park, 2004; Sherman et al., 2005), the vast majority of interviewees contended that CFTs can develop the new design of product and process quickly through sharing their experience, knowledge, and resources. As respondents said:

*"As a result of the diverse experiences and knowledge of CFTs' members, new ideas can be generated for developing innovative design of product and process quickly. Furthermore, the performance of these people when developing new products can be improved due to the participation of resources and experience, thus NPD process could be successful and rapid."* (R5)

*"NPD time could be reduced when utilising CFTs for implementing this process. This is because of their collaborative practices by which they can benefit from the diversity of their knowledge and expertise. Moreover, effective communication among members of NPD teams can promote their ability to perform their tasks successfully and quickly."* (R13)

As stated by Azzone et al. (1991); and Park (2004), some participants reported that implementing NPD process can be rapid when utilising CFTs, due to the ability of these teams to perform their tasks quickly through implementing parallel activities and eliminating non-value activities. As an interviewee commented:

*"Through adopting CFTs, the company can develop new products frequently and quickly because these teams are able to perform their activities simultaneously and accelerate processes. This advantage depends on the effective collaboration of CFTs through sharing their resources, information, and expertise."* (R16)

### III- Utilising sufficient operations requirements

As demonstrated by Hum & Sim (1996); Prabhaker (2001); Slack et al. (2009); and Song & Swink (2002), some participants stressed the importance of using production resources and facilities efficiently and adequately as operational requirements for developing new products to be launched rapidly and before competitors. They believed that production capabilities can be improved by CFTs to meet the specifications of new products through their integrated decisions on operations facilities and resources such as production technology. As respondents commented:

*"The effective use of CFTs to develop new products helps to reduce NPD time. The reason for this is the collaborative and coordinated activities of marketing and operations members to develop the tactical requirements of a new product. For instance, in my organisation, CFTs make decisions and obtain the consent of the top management and industry ministry on importing new machines to produce new products."* (R1)

*"Making correct and fast decisions on making modifications in production lines by CFTs for developing new products can help to manufacture and launch the new product before competitors. This is because of the essential role of these decisions in employing production resources and facilities for improving the new product rapidly."* (R17)

### 5.4 Summary

This chapter reported and discussed the findings of the research. This was done by integrating the findings from each of the four phases of the conceptual framework through explanation building while analysing the data in the light of the literature review. In relation to the first phase, the discussion of the findings of the first research question comprehensively shows why marketing and manufacturing groups should work together in three main areas: new product development, joint marketing and operations plans and decisions, and dependability

of delivery. According to the perceptions of respondents and the literature review, several reasons for this joint work have been discussed reflecting the strategic imperative of the integration between marketing and operations functions. In terms of the second phase that is about the methods for achieving marketing and operations interface, the findings of the second research question shed light on how to manage the interactions between these two areas across their functional boundaries to become convergent by using CFTs. This was clear through discussing the responses of the interviewees, which show many contributions of CFTs to achieving marketing and manufacturing integration. These contributions were grouped into three main categories: collaboration, sharing information, and responsiveness. In respect to the third phase, through analysing the data of the third research question, this study found that this integration could be developed when identifying and dealing with the potential problems that may occur while marketing and operations people work jointly within CFTs. According to the perceptions of participants, there are many problems that may be associated with implementing CFTs, which can be categorised into three major impediments, namely conflict, lack of empowerment, lack of communication. Finally, as shown through discussing the data of the fourth phase, the findings of the fourth research question show that the delivery performance of an organisation can be improved when utilising CFTs, due to their contributions to rapid delivery, delivery on time, and quick development of new products. The findings of the four research questions were supported by the observations of the factories and sales centres of the two case study organisations in relation to the CFTs applications, but there were some weaknesses including outdated manufacturing technology, bottlenecks, and inappropriate transport equipment in some factories. In addition, the products in the sales centres of the two case study organisations in Hilla and Wasit were not well-organised and packaged. Furthermore, there was a use of papers and forms to manage the information of customer's orders, in addition to the complex procedures of these centres. In summary, the study found that although the reality of the integration between marketing and operations functions has been widely triangulated through the perceptions of respondents, and its impact on the delivery performance has been known, the delivery capabilities of the selected cases need to be developed by CFTs applications as observed in the research.

## CHAPTER SIX

### CONCLUSION AND RECOMMENDATIONS

#### 6.1 Introduction

This chapter summarizes the major findings of the study, drawing conclusions in terms of how it develops understanding and contributes to research on the integration between marketing and operations functional areas. According to the review of previous research in chapter 2 and the empirical data presented in chapter 4, conclusions are drawn in relation to the research objectives outlined in chapter 1. In addition, recommendations are made with regard to the implications of this research for the two case study organizations in respect to the effective use of CFTs for developing delivery performance in the Iraqi context. Finally, further research opportunities are presented.

#### 6.2 The major Research Findings

##### 6.2.1 The Strategic Imperative of the Marketing and Operations Interface

Building upon the literature reviewed and the empirical research, the first research objective “*To investigate the need for interfacing marketing with operations*” was achieved through developing insights into the strategic imperative of a close working relationship between the two functions. Through analysing data from the first research question “*Why should marketing and operations groups work together?*”, the main reasons behind marketing and operations integration were identified in relation to their interdependent tasks and the inherent uncertainty of external and internal environments. In this research, all respondents in both case study organizations agreed that the interdependence and high complexity of marketing and operations interactions relates significantly to the NPD process, planning activities, and dependability of delivery. This section summarizes the key findings and presents conclusions on the necessity of the joint work of manufacturing and marketing departments in manufacturing organizations.

The NPD literature review highlights the importance of the joint involvement of marketing and operations groups in the NPD process due to the inherent interdependence of their tasks when implementing this process (Gonzalez et al., 2004; Hausman et al., 2002; Jassawalla and Sashittal, 2006; Swink and Song, 2007; Troy et al., 2008). In the light of this, the research showed that marketing and operations people should come together to develop new products in terms of identifying customer preferences, sharing experience and resources, improving each new product's characteristics, and fulfilling production requirements.

In relation to customer preferences, in agreement with the literature, confirming the significant impact of market information on NPD success (Bendoly et al., 2012; Gonzalez et al., 2004), the findings emphasized the importance of understanding customers' expectations accurately in good time, and for marketing and operations people working jointly to be able to develop the new products that customers prefer. As found in the literature (e.g., Calantone et al., 2002; Guenzi and Troilo, 2006; Hausman et al., 2002), the explanatory research suggests that sharing experience and resources among marketing and operations functions is more beneficial for performing NPD tasks effectively. Furthermore, building upon the work of other researchers such as Song & Swink (2002) and Swink & Song (2007), there appears to be a fundamental similarity of views amongst interviewees regarding the vital role of exchanging diverse expertise between marketing, operations, and R&D members within NPD teams. This assists in generating creative ideas to develop innovative product design and characteristics. In respect of production requirements, and in light of the extant literature (e.g., Gonzalez, 2004; Swink and Song, 2007; Song and Swink, 2002; Slack et al., 2009), the research highlighted the significant role of the operations department in translating the new product characteristics into production facilities efficiently and sufficiently to be convergent with the marketing group. In contrast, some findings showed that the decisions on the modifications of production facilities are made only by operations people. This differs from the literature which emphasised the integrated decisions of marketing and operations regarding production resources when developing new products (Tang, 2010). One can conclude, therefore, that each of the marketing and operations functions has a fundamental complementary role in achieving the fit between the customers' expectations and sufficient production capabilities to develop innovative products by the NPD team.

In agreement with the literature underlining the role and importance of coordinated marketing and operations planning (e.g., Hausman et al., 2002; Sharma 2013; Tang 2010; Tavares Thome et al., 2012), the research showed that manufacturing and marketing people can develop their plans and decisions together to be integrated through sharing information, utilizing integrated information systems, exchanging knowledge and experience, and resolving production schedule problems. However, there was a difference between the findings and the literature, because some data suggested that marketing and operations people can work together when they make their plans separately according to their shared information. This planning can cause disagreements between these two departments, due to their different functional priorities (Tang, 2010).

In terms of sharing information, as recommended in the literature, for example Lee & Whang (2000), Brettel et al. (2011), and Cho & Lee (2013), there was an agreement among most respondents that marketing and operations personnel need to share their understanding regarding market dynamics and production facilities through exchanging their information to be able to make their plans and decisions jointly. However, as mentioned by Bharadwaj et al. (2007), and Sharma (2013), the research findings suggested that sharing information between marketing and operations functions requires the adoption of computer information systems as an integrated mechanism to be more accurate and coordinated. In the light of Hausman et al. (2002); O’Leary-Kelly & Flores (2002); and Tang (2010), some responses of interviewees underline the significant contribution of shared knowledge and experience to developing marketing and production planning. Furthermore, as Tang (2010) stated, some other participants argued that marketing and operations groups can resolve production schedules problems when they make highly integrated plans. Consequently, one can conclude that in order to reduce the uncertainty and increase the accuracy to make integrated plans and decisions, marketing and operations people should share and coordinate their information and exchange their knowledge through using integrated information systems.

In support of the literature review underlining the integration between manufacturing and marketing strategies as a key to improving the delivery capabilities of firms (Kim et al., 2010; Lin et al., 2012; Nahm et al., 2003; Prabhaker, 2001; Sawney and Piper, 2002), the research showed that achieving dependability of delivery requires taking effective action in marketing and operations areas in relation to production technology, product distribution systems, time-based practices, and information technology.

In respect of the production technology, as has been reviewed in the literature (e.g., Crittenden et al., 1993; Kim et al., 2010; Nahm et al., 2003; Prabhaker, 2001), there appears to be a clear consensus among the majority of respondents that the ability of the operations function to supply customers' orders rapidly to be delivered on time, can be enhanced when reducing process time through the adoption of advanced manufacturing technology. In addition, as recommended in the literature, for example Lin et al. (2012), and Tammela et al. (2008), the research showed that using marketing programmes such as distribution systems efficiently and having sufficient distribution channels can contribute to delivering products to customers quickly in the right place. In agreement with the literature emphasizing the significant contribution of accelerating activities of marketing and operations groups to enhance dependability of delivery (e.g., Lin et al., 2012; Nahm et al., 2003), the findings underlined the importance of performing time-based practices such as parallel activities and avoiding non-value adding activities by marketing and operations people, thereby reducing lead time. In terms of information technology, and in line with authors such as Bendoly et al. (2012) and Lin et al. (2012), some interviewees referred to the essential contribution of the two groups adopting information technology to share their information rapidly in real time; thus orders will be delivered to customers in a shorter timeframe. In contrast, some findings suggested that the dependability of delivery can be achieved through increasing production resources, such as manpower and machines, and using a rewards system, as good practices for reducing delivery time because of their impact on increasing the productivity. However, this differs from the literature which refers to the increase in production costs when adopting these practices, thereby higher prices (Evans and Collier, 2007). In addition, the increased production costs conflicts with the aim of the operations group, which is to reduce these costs, therefore, disagreements between marketing and operations people occur (Tang, 2010).

Consequently, one can conclude that the dependability of delivery can be achieved if marketing and operations functions work jointly to reduce time consumption in their processes through adopting time-based applications.



### **6.2.2 The Significant Contribution of CFTs to Marketing and Operations Integration**

According to the literature reviewed in chapter 2 and the empirical investigation, the second research objective *"To explore how to attain the integration between marketing and operations functions through utilizing CFTs in the Iraqi public textile industry sector"* was achieved through highlighting the significant contribution of CFTs to the marketing and operations interface. Through analyzing data from the second research question *"How can the integration between marketing and operations functions be achieved by using CFTs?"*, the crucial role of utilising CFTs in closing the gap between marketing and operations areas to be integrated was underlined. In this explanatory research, all informants in both case study organizations were in agreement that using CFTs is the most effective approach to achieve the integration among the marketing and operations functions through collaboration, sharing information between members, and responsiveness. These contributions of CFTs strongly relate to the two essential elements of market orientation, which are central to meeting customers' needs on time: (1) communication and sharing of information and resources (2) integration and cooperation of various functions (Peng & George, 2011), taking into account the focus on marketing and operations as value adding functions (Piercy, 2007). This section summarizes the key findings and presents conclusions on how to manage the marketing and operations relationship effectively by adopting CFTs to become more market oriented.

The CFT literature review emphasized the importance of cooperation and coordination among CFT people to the convergence between marketing and operations departments (Bendoly et al., 2012; Horwitz, 2005; Shen, 2002; Song & Swink, 2002; Swink & Song, 2007; Tsai & Hsu, 2013; Tang, 2010). In the light of this, the research showed that the collaborative activities of CFTs positively influence the relationship between manufacturing and marketing functions to become closer through innovation. This is because of the ability of CFTs to share the experience, knowledge, and resources of the two functional areas to be more valuable to develop their capabilities, thus disagreement will be reduced or avoided.

In agreement with the literature confirming the significant positive impact of the diverse expertise and resources of CFTs on marketing and operations joint work (Horwitz, 2005; Slack et al., 2013; Song & Swink, 2002), the findings showed that sharing varied experience, efforts, and resources among people of CFTs leads to a greater link between marketing and production groups for innovation. As found in the literature (Hausman et al., 2002; Nath et al., 2010), the research showed that manufacturing organizations can develop marketing and

operations capabilities to be integrated when they benefit from the diverse expertise, resources, and knowledge of CFTs. Furthermore, building upon the work of other researchers such as Hausman et al. (2002), Horwitz (2005), and Tang (2010), some respondents argued that convergence between marketing and operations personnel can be increased when they work together within CFTs due to their collaboration encouraging them to direct their efforts towards achieving common goals. One can conclude therefore that through the collaborative and coordinated activities of CFTs, the functional boundaries between marketing and operations departments can be removed through sharing their resources and experiences and developing their capabilities. Consequently, due to the different functional objectives and responsibilities of marketing and operations members, this collaboration among them significantly closes the gap between these two core functions and unites their effort and resources to satisfy the customer, thus shaping their culture to become more market oriented (Piercy, 2007).

Building upon the literature (e.g., Song and Montoya-Weiss, 2001; Tang, 2010; Tsai & Hsu, 2013), sharing information between CFTs people strongly contributes to enabling marketing and operations members to work together in a coordinated manner. In the light of this, the research revealed that marketing and manufacturing strategies can be integrated when exchanging information among members of CFTs due to the integration of information, efficiency of performance, coordination of tasks, and integrated plans and decisions.

In relation to the integration of information, as recommended in the literature, for example Brettel et al. (2011), Kulp et al. (2004), Sharma (2013), and Tang (2010), there was an agreement among most respondents that through sharing information between members of CFTs, the information of marketing and operations groups could be integrated regarding market dynamics and production capabilities. In the light of Kulp et al. (2004), Horwitz (2005), and Tang (2010), the findings showed that due to this integrated information, marketing and operations people can share their understanding about the requirements of marketing and manufacturing, enabling them to perform their tasks efficiently. Furthermore, as mentioned by researchers such as Gattiker (2007), Kulp et al. (2004), and Tang (2010), some other participants argued that sharing information among CFTs people can help to achieve the coordination between manufacturing and marketing members when implementing their tasks. In line with Brettel et al. (2011), Kulp et al. (2004), and Lee & Whang (2000), the research suggested that through the shared information of CFTs, the manufacturing and marketing personnel could be able to make their plans and decisions together. Consequently,

one can conclude that as a result of sharing information among CFTs people, the joint work of marketing and operations groups could be enhanced due to the significant positive impact of this sharing on the coordination between these personnel and their performance. This sharing of information as an important requirement for adopting market orientation, makes this information valuable and enhances the ability of an organization to respond to market information to become market oriented (Dong et al., 2016).

In agreement with the literature confirming the fundamental role of using CFTs in satisfying customers through rapid responsiveness (Brettel et al., 2011; Cho & Lee, 2013; Lin et al., 2012; Parker, 2003; Shen, 2002; Tsai & Hsu, 2013), the explanatory research findings illustrated that organisations can respond to market demand quickly when adopting CFTs. This is because of the contribution of CFTs to the convergence between manufacturing and marketing functions in relation to accurate timely market information, innovative design of product and process, and fast delivery.

Building upon the literature (e.g., Brettel et al., 2011; Bunduchi, 2009; Cho & Lee, 2013; Droge et al., 2004; Lee & Whang, 2000), the research reported that as a result of the close relationship between CFTs and markets, the marketing group provides accurate information regarding customers and competitors in good time, thus exploring opportunities in the market place. In the light of Bunduchi (2009), Chen (2007), Horwitz (2005), Jassawalla & Sashittal (2006), Song & Swink (2002), and Tsai & Hsu (2013), the findings showed that exchanging diverse expertise, knowledge, and resources between members of CFTs can lead to generating creative ideas by which innovative design of products and processes could be improved by manufacturing and marketing groups jointly. In addition, as recommended by other researchers such as Daspit et al. (2013), Lovelace et al. (2001), Parker (2003), Shen (2002), and Tsai & Hsu (2013), the research shows that due to the time-based practices of CFTs such as parallel activities, and their innovation, the ability of marketing and operations personnel to deliver products to customers quickly can be enhanced. In summary, it can be argued that the innovation and speed of CFTs activities is central to rapid responsiveness, reflecting the integration between marketing and production strategies. In addition, this responsiveness reflects the ability of organisations to implement market orientation when delivering great value to their customers (Martin & Grbac, 2003).

### 6.2.3 The key Impediments to CFTs

Building upon the literature reviewed and the empirical research, the third research objective *"To identify the potential problems that may occur during the implementation of CFTs in the Iraqi public textile industry sector"* was achieved through underlining the key obstacles to CFTs that may happen when marketing and operations members work together. In addition, though analysing data from the third research question *"What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?"*, the key impediments to CFTs were identified in relation to cross-functional coordination (CFC) as one of the important elements of market orientation internal barriers. These barriers strongly relate to the four dimensions of firm culture: system, structure, procedure, and communication of organisation (Tomaskova, 2009). In this explanatory research, all respondents in both case study organizations agreed that the effectiveness of CFTs can be impeded due to three main obstacles, namely: conflict, lack of empowerment, and lack of communication. This section summarises the key findings and presents conclusions on the major impediments to the use of CFTs across marketing and operations functional boundaries which need to be dealt with to enable better integration between these two areas, by which the implementation of market orientation could be developed.

As pointed out in the literature (e.g., Calantone et al., 2002; Chen, 2007; Daspit et al., 2013; Holland et al., 2000; Kotlarsky et al., 2015; Lalsing et al., 2012; Parker, 2003; Piercy, 2007), the findings showed that the relationship between members of CFTs can negatively be influenced due to the disagreements that can happen among them, which impede the adoption of market orientation culture (Piercy, 2007). Furthermore, the research underlines four main reasons behind this conflict: different functional goals and priorities, competition for resources, differences in knowledge and specialized experience, and limited experience in resolving problems. In contrast, there was a difference between the literature and a minority of data, which showed that there is not any conflict between members of CFTs. However, the relevant literature illustrated that conflict is one of the important potential problems that may occur among people of CFTs (Parker, 2003). Furthermore, members of CFTs are representative from different functional areas of an organisation, and they therefore seek to achieve different functional objectives and priorities that might cause conflict (Holland et al., 2000).

In the light of Calantone et al. (2002); Chen (2007); Holland et al. (2000); Lalsing et al. (2012); Parker (2003); and Piercy (2007), most respondents believe that the different functional responsibilities and loyalties of CFTs people that may lead to conflict between members, in particular marketing and manufacturing groups is a common obstacle to achieving the goals of CFTs. Building upon the work of other researchers such as Hill (2005); Holland et al. (2000); Malhotra & Sharma (2002); Parker (2003); and Piercy (2007), the findings suggested that the effectiveness of CFTs can negatively be impacted when members compete against each other to gain more resources in order to achieve their functional objectives. In addition, as mentioned by Daspit et al. (2013); Horwitz (2005); Kotlarsky et al. (2015); Majchrzak et al. (2012); and Parker (2003), some informants agreed that members of CFTs sometimes have conflicting views because of their diverse expertise, background, and beliefs. This can result in disagreements among them, thus impeding the benefits of this CFT diversity. As found by Daspit et al. (2013); McDonough (2000); Parker (2003); and Piercy (2007), some other participants argued that CFTs can be ineffective if members are unable to solve problems themselves through their diverse experience and knowledge. Consequently, it is clear that the cohesion of CFTs can be impeded due to the disagreements between members when they focus more on how to achieve their different departmental objectives more than firm's goal. Therefore, organizations should encourage the collaboration among these people to become more effective in a supportive environment (Daspit et al., 2013) through developing their skills to resolve problems (Parker, 2003), and managing their interactions towards achieving the common goals (McDonough, 2000). These procedures can lead to the convergence between the functional cultures of marketing and operations groups to become a single culture, which is market orientation culture.

In support of the literature highlighting the importance of the empowerment of CFTs (Bidault & Cummings, 1994; Chen et al., 2015; Chen, 2007; Henke et al., 1993; Holland et al., 2000; Parker, 2003; Tata & Prasad, 2004; Yang & Ok Choi, 2009), the findings suggest that the innovation and performance of CFTs can be impeded if they lack empowerment due to centralization and limited authority, limited autonomy, and unclear tasks and plans. These obstacles can negatively influence the innovation and the decisions of market oriented organizations in terms of speed and flexibility (Pulendran et al., 2000; Trueman, 2004). However, some data suggested that CFTs used by the two case study organisations are empowered and there is not any lack of authority and autonomy while the literature stressed the lack of empowerment as a significant potential impediment to CFTs (Holland et al., 2000),

particularly in the turbulent markets, such as Iraqi market (Chen, 2007). Furthermore, CFTs need to be more empowered in order to adapt to the pressure of these markets (Chen et al., 2015).

In terms of centralization and limited authority, as reported in the literature, for example Chen et al. (2015); Chen (2007); Henke et al. (1993); Holland et al. (2000); and Parker (2003), there was agreement among the vast majority of informants that CFTs in their organizations are unauthorized to make important decisions such as importing new machines or production lines. Furthermore, they should obtain consent from the top management and the Iraqi industry ministry to make these decisions. As Holland et al. (2000); Parker (2003); and Yang & Ok Choi (2009) illustrated, the research also showed that the other parts of an organisation sometimes meddle with the decisions and tasks of CFTs in order to achieve their functional priorities or to develop these decisions and tasks. In addition, building upon Chen (2007); Moon & Swaffin-Smith (1998); Parker (2003); and Yang & Ok Choi (2009), some respondents underlined the importance of information for CFTs when making plans and decisions. Therefore, they reported that in some cases due to the lack of information and misunderstanding the overall task of CFTs by members, the plans and decisions of CFTs will be unclear. One can conclude that organisations cannot benefit from the full value of the diverse resources, expertise, and efforts of CFTs because they do not empower these teams sufficiently. Consequently, CFTs can be more effective and innovative when granted more authority, thus improving their skills and knowledge to make clear and appropriate decisions and plans which underpin the autonomy of CFTs. As a result of this, CFTs could be a superior method to implement market orientation through their innovation and rapid responsiveness (Auh & Menguc, 2005; Newman et al., 2016).

In relation to the lack of communication, in the light of the literature (e.g., Horwitz, 2005; Holland et al., 2000; Kotlarsky et al., 2015; Lalsing et al., 2012; Lovelace et al., 2001; Nguyen and Rukavishnikova, 2013), the explanatory research showed that due to the significant impact of communications on CFTs performance, the effectiveness of CFTs can sometimes be impeded when they lack communication. Furthermore, communication represents one of the important functional barriers of market orientation, due to its significant impact on the performance of employees (Tomaskova, 2009). The majority of participants mentioned four reasons that can cause this lack of communication: (i) Diverse backgrounds, experiences, and beliefs (ii) Centralization (iii) Vertical communication (iv) Insufficient use

of communication technology. In contrast, some findings showed that communication of CFTs is effective and there is not any impediment to this communication although the literature emphasised that the lack of communication is one of the most significant potential problems of CFTs (Lalsing et al., 2012). Furthermore, due to the different background and specialized expertise of members, communication of CFTs is often impeded as a result of misunderstanding and conflicting points of views (Lovelace et al., 2001; Majchrzak et al., 2012).

Building upon Horwitz (2005); Kim et al. (2006); Kotlarsky et al. (2015); Lovelace et al. (2001); and Majchrzak et al. (2012), the findings implied that in some cases, communication among people of CFTs can be problematic because of misunderstanding and conflicting points of view emerging from their diverse expertise and background. In addition, as found by Moenaert et al. (1994), and Nguyen and Rukavishnikova (2013), some respondents indicated that CFTs sometimes lack communication when distributing information and ideas unequally among CFTs people due to focusing more on members from the operations group than others, resulting in less benefit from their diverse experience and knowledge. As confirmed in the literature, for example Chen (2007), and Nahm et al. (2003), some responses in the research highlighted the negative effect of the vertical communication between CFTs and other departments of an organisation on the effectiveness of this communication in terms of speed and accuracy. In agreement with the literature (e.g., Bharadwaj, 2000; Chen, 2007; Leenders et al., 2003; Lovelace et al., 2001) underlining the importance of using communication technology to enhance CFTs' effectiveness, the research revealed that CFTs in organisations utilise the internet as a technological application of communication, but insufficiently due to the limited software which is used for this purpose. Furthermore, there was a need for more facilities and training programmes to benefit from ICT applications. One can conclude that in order to use CFTs effectively by market oriented organisations, the communication between members and with other parts of a company needs to be more effective and rapid in terms of the language, the distribution of information, the organisational structure, and technological applications.

#### **6.2.4 The Extent to which the Delivery Performance of Iraqi Public Textile Organisations has been developed by Utilizing CFTs.**

Building upon the literature review and the empirical investigation, the fourth research objective *"To investigate the delivery performance of Iraqi public textile manufacturing organisations which utilize CFTs"* was achieved through highlighting the main role of CFTs in developing the delivery performance of firms, and by observing the relevant themes in the field within both case study organizations. Through analysing data from the interviews regarding the fourth research question *"How can product delivery performance be maximized through adopting CFTs in Iraqi public textile manufacturing organizations?"*, the main contributions of CFTs to improving the delivery competitive advantage were identified in relation to the integration between marketing and operations areas. In this research, there was an agreement among all respondents in both case study organizations that the time-based techniques and innovative activities of CFTs relate significantly to rapid delivery, delivery on time, and quicker NPD processes. Furthermore, through the analysis of observational data, the strengths and weaknesses of the delivery performance of the organizations were determined in relation to CFTs applications. This section summarizes the key findings and presents conclusions on the achievement of the delivery priority by utilizing CFTs in the Iraqi public textile manufacturing organizations.

In relation to rapid delivery, in the light of studies such as Droge et al. (2004); Ernst (2002); Gemser & Leenders (2011); Hum & Sim (1996); Lovelace et al. (2001); Prabhaker (2001); Santa et al. (2010); and Spanner et al. (1993), the findings showed that the adoption of CFTs by manufacturing organisations enhances their ability to deliver products to their customers quickly as a result of developing time-based manufacturing capabilities, reducing manufacturing time, and improving marketing capabilities of delivery.

In agreement with the literature (e.g., Droge et al., 2004; Gemser & Leenders, 2011; Nguyen & Rukavishnikova, 2013; Santa et al., 2010; Shen, 2002) arguing the importance of CFTs to enabling organisations to compete against time in the market place, the research found that through utilising CFTs, better decisions on developing time-based production resources such as manufacturing technology can be made quickly by these teams, due to their diverse experience and knowledge. In addition, as recommended by Droge et al. (2004); Ernst (2002); Gemser & Leenders (2011); Hum & Sim (1996); Spanner et al. (1993); and Stalk and Hout (1990), the majority of respondents argued that as a result of the innovation of CFTs, time



consumption in manufacturing processes can be reduced when they made creative product and process design. Furthermore, these informants believe that the collaborative practices of CFTs such as parallel activities and their effective communication lead to decreased manufacturing time. Building upon Tammela et al. (2008), and Lin et al. (2012), some participants reported that marketing members of CFTs contribute to diminishing delivery time when they implement the relevant marketing strategies efficiently, in particular distribution systems, and use sufficient distribution channels. This implementation helps these people to benefit from the advantages of the fast manufacturing processes, thus developing their delivery capabilities. In brief, it is clear that organisations can ship orders to their customers in a shorter time when adopting CFTs, due to their ability to reduce design, production, and delivery time through the effective time-based techniques of marketing and operations members.

In terms of delivery reliability, building upon Olhager et al. (2001); Karim et al. (2010); Keller (2001); Santa et al. (2010); and Tang (2010), the findings revealed that products can be delivered to customers on time when CFTs are utilised by manufacturing organisations, as a result of the coordinated planning and scheduling, matching sales forecasts to production capacity, and conformity of (sales / production) plans and schedules.

Building upon Keller (2001); Santa et al. (2010); Sharma (2013); and Tang (2010), the explanatory research findings suggested that through the joint planning of marketing and operations members of CFTs, organisations can satisfy customers' orders according to the due dates, as a result of the integrated plans and schedules of the two groups. In addition, as mentioned in the literature (e.g., Berglund et al., 2011; Keller, 2001; Olhager et al., 2001; Song & Swink, 2002; Tang, 2010; Tavares Thome et al., 2012), there was an agreement among the majority of informants that as a result of sharing information and knowledge between CFTs people, members in particular marketing and operations groups share their understanding about market demand and production capacity, thus predicting sales and production capacity more accurately. In common with Ambrose (2015); Karim et al. (2010); Keller (2001); and Tavares Thome et al. (2012), the research suggested that the use of CFTs by organisations can help them to achieve the fit between (sales/ production) plans and schedules, due to the sharing of information and the coordination between members, especially marketing and operations personnel. Therefore, one can conclude that the joint work of marketing and operations members within CFTs in relation to forecasting the sales

and production capacity, and making (sales/production) plans and schedules, is central to delivering products on time.

In regard to quick NPD, in agreement with the work of other researchers such as Calantone et al. (2002); Daspit et al. (2013); Dayan and Basarir (2010); Droge et al. (2004); Gemser & Leenders (2011); Menon et al. (2002); Park et al. (2009); and Sherman et al. (2005), all of the respondents were in agreement that organizations can develop and launch new products in the markets quickly and frequently when implementing this process by CFTs. As they perceived, this implementation strongly relates to exploring market opportunities rapidly, developing innovative design of product and process quickly, and employing sufficient operations requirements.

In agreement with Bendoly et al. (2012); Brettel et al. (2011); Bunduchi (2009); Droge et al. (2004); and Daniel Sherman et al. (2005), the research showed that due to the close relationship between CFTs and customers, and effective market research, these teams can gain timely correct information regarding customers' expectations and competitors' actions, leading to exploring market opportunities before competitors. As recommended by Bunduchi, (2009); Calantone et al. (2002); Daspit et al. (2013); Dayan and Basarir (2010); Hyung- Jin Park et al. (2009); and Sherman et al. (2005), the findings revealed that as a result of the sharing of the diverse expertise, resources, and views between CFTs members, product and process innovation can be developed quickly through the creative ideas of these people. In addition, some informants argued that the ability of CFTs people to develop new products more rapidly can be enhanced when they implement this process frequently, resulting in increased experience in this respect as a result of learning. Building upon Hum & Sim, (1996); Prabhaker, (2001); Slack et al., (2009); and Song & Swink, (2002), some evidence was suggested by the research, illustrating that through utilising CFTs to implement NPD process, production facilities can be improved when members make integrated decisions on how they can be more efficiently and sufficiently used, thus meeting new product characteristics rapidly. In sum, it can clearly be argued that the speed of the NPD process can significantly and positively be impacted by the use of CFTs in implementing it, in relation to market opportunities, innovation of product and process, and tactical requirements.

Despite the fundamental role of using CFTs in achieving the product delivery priority in manufacturing organizations, this achievement relies on how to exploit the relevant resources

of these companies, through the applications of CFTs (Ahmad & Schroeder, 2011). In this context, the study related themes: factory layout, manufacturing technology, manufacturing processes flow, balance of production line, materials handling, and customer orders, were observed by the researcher in the factories and sales centres of both case study organizations. Through analysing the findings of these observations, a number of strengths and weaknesses were revealed in relation to the time-based capabilities of manufacturing and marketing departments.

In agreement with studies such as Stalk & Hout (1990), and Stalk (1988), highlighting the significant impact of the factory layout on manufacturing time, the research showed that production facilities of all plants in the two case study organizations are organized in the sequence as required by the product, leading to fast flow of materials and information along the production lines. In terms of manufacturing technology, as observed by the researcher, there was a use of advanced technology in the factories of both case study organizations, which contributed to reducing time consumption in operations. However, some of these plants still employed outdated technology in some production lines, resulting in increased lead time due to delays and wasted time (Brethauer, 2002; Droge et al., 2004; Lin et al., 2012; Song & Swink, 2002; and Stalk & Hout, 1990). In relation to manufacturing processes flow, as observed by the researcher, the manufacturing processes in all factories of both organisations flow sequentially, thus sharing production resources. Therefore, as recommended by Evans & Collier (2007), and Krajewski et al. (2013), these plants need to identify the processes which do not share production facilities, for them to be run in parallel in order to reduce manufacturing time. In addition, in line with Slack et al. (2009), the findings from the observations showed that the manufacturing processes flow in the production lines of the factories 2, 5, and 6 was unsmooth, due to their outdated technology, which led to breakdowns and a variation in the efficiency and capacity of their workstations. In line with the literature (e.g., Krajewski et al., 2013; and Slack et al., 2009) emphasising the essential impact of the balance of production line on manufacturing time, the research revealed that there were some bottlenecks in the production lines of Factories 1 and 6, because of allocating production resources unequally to each workstation, resulting in wasting time on processes, and increasing lead time. Building upon Slack et al. (2013), who found that the appropriate use of the transport equipment in a plant contributes to reducing time consumption in processes, the research suggested that most factories of both case study organisations used appropriate equipment for handling materials among workstations, which was convenient to

the layout of these plants. However, in an exception to this, Factory 6 utilised inappropriate transport equipment, which could lead to delays and wasted time.

Finally, as found by observing the sales centres of the two organisations, these centres have some advantages when they deal with the orders of their customers. First, they are in close geographical proximity to the factories and city centre, except for the sales centre of organisation A, which is located far from the city centre of Najaf. Secondly, the two case study organisations share their sales centres in order to develop their distribution programme. However, despite the products being varied and well-organised and packaged in the sales centre of organisation A in Najaf, the products in other centres of both case study organisations are not well-organised and packaged. In addition, the researcher observed some centralised routine procedures in these centres, such as using specified forms which should be signed by the marketing and audit managers when selling products to the retailers and public companies. Furthermore, the information of customers' orders is processed by utilising paper, forms, and database. In agreement with studies such as Mariadoss et al. (2011) highlighting the importance of marketing performance to the product delivery, the research showed that marketing groups in the two organisations need to deal with the orders of their customers more effectively in terms of product, procedures, promotion, and distribution. This can enable these companies to benefit from the fast supply of products to be delivered to customers before competitors (Azzone et al., 1991; Tammela et al., 2008; Lin et al., 2012). Briefly, one can conclude that the capabilities of the two case study organisations could be further developed to achieve time-based competitive advantages through the practical applications of CFTs in relation to marketing and manufacturing requirements. As observed by the researcher, the two organisations adopt two inventory systems by their sales centres: "Make-to-stock" and "Make-to-order". Therefore, they should focus on achieving delivery priorities: rapid delivery and delivery reliability respectively (Handfield & Pannesi, 1992; Kaipia, 2008).

### 6.3 Summary

This thesis has investigated marketing and operations integration in terms of the reasons behind it, the methods for it through using CFTs, its development by identifying the impediments to CFTs, and delivery priority as an achievement in the Iraqi public textile organisations. In addition, the present study provides key conclusions and implications for managing and developing the interactions between the two functions in practice. The Phase I research objective concentrated on the reasons why marketing should be in a close relationship with operations. A key conclusion and implication of the research is that it is imperative to link between marketing and operations groups due to the high interdependency and uncertainty of their tasks in relation to NPD process, planning activities, and dependability of delivery. In terms of NPD process, marketing and operations people should work jointly to achieve the fit between customers' needs and operational requirements through their diverse expertise. Similarly, they need to develop their planning activities together by sharing their information to be coordinated. Furthermore, marketing and operations functions should be convergent through their effective time-based actions to achieve the dependability of delivery.

In addition, the phase II research objective focused on how to remove the functional barriers between marketing and operations departments through adopting a CFTs mechanism. A key conclusion of the research is that the gap between marketing and operations areas can be bridged when involving them in CFTs, as a result of the collaboration, sharing information, and responsiveness. In relation to this collaboration, marketing and operations departments can fully benefit from the diverse resources and experience of CFTs to be convergent through the effective collaborative interactions of their members. In addition, these two functions can coordinate their tasks to be more effectively performed through sharing their information. As a result of this collaboration and coordination, the organisations can respond to market demand rapidly due to the integration between marketing and operations strategies, thus becoming more market oriented. However, marketing and operations functional areas cannot automatically be integrated when organizations utilize CFTs, because of the potential problems that may occur when members work together. Therefore, the phase III research objective focused on how to reveal these problems and spotlighted the key obstacles to CFTs in the two case study organizations, involving conflict, lack of empowerment, and lack of communication, to deal with them for better integration between marketing and operations areas. In terms of the conflict, due to the different functional objectives and responsibilities of

CFTs members, disagreements happen among them, which negatively impact their relationship. In addition, in order to achieve the goals of CFTs, they should be empowered. Therefore, the effectiveness of CFTs can be impeded because of the limited authority and autonomy, and the lack of information. In relation to the lack of communication, due to the centralization, vertical communication, and insufficient use of the technological applications, communicating information and ideas between members of CFTs and with other parts of the organizations can be problematic.

Finally, the phase IV research objective concentrated on the role of CFTs in achieving the delivery priority. According to the analysis of respondents' perceptions, a key conclusion of the research is that the time-based capabilities of marketing and operations functions can be developed when their members work jointly within CFTs, resulting in fast delivery, delivery on time, and rapid NPD process. In relation to the fast delivery, due to the ability of CFTs to reduce lead time through their time-based practices, organizations can deliver products quickly to their customers. In addition, as a result of the coordinated plans and schedules of marketing and production members, customers can receive their orders on time. In terms of the rapid NPD process, the close relationship between CFTs and customers, and the innovation of these teams lead to developing new products before competitors.

However, through the analysis of the observations, the findings indicate that there were a number of weaknesses in the applications of CFTs in relation to marketing and production areas, which could impede the ability of the two organisations to compete against time. As found by the observer, these weaknesses involve: (i) a use of outdated technology in some production lines (ii) bottlenecks in some workstations (iii) an imbalance in distributing the production resources on some workstations (iv) an absence of the maintenance of the transport equipment used in the factories (v) a use of inappropriate transport equipment in Plant 6 (vi) products are not well-organised and packaged in the sales centres, except the sales centre in Najaf (vii) routine procedures when selling products.

## **6.4 Contribution to Knowledge**

According to the major findings presented in section 5.2, this study contributes to the knowledge through:

### **6.4.1 Theory**

- a) Developing a new comprehensive theoretical framework consisting of four phases: the needs, methods, development, and achievement; by which the rationale of marketing and operations integration can be conceptualized, as opposed to the previous conceptualisation of this interface which has tended to be disjointed and piecemeal in much of the existing literature. In the first phase of this framework, the interactions between marketing and operations functions have been better understood through investigating a three dimensional approach, as a foundation for more effective management of these interactions. Furthermore, the main contributions of CFTs to the marketing and operations interface were underlined in the second phase, through examining the interplay and association between these two groups when they work together within CFTs. In order to develop this integration, the potential problems that may be associated with using CFTs were revealed in the third phase. Finally, in the fourth phase, the significant role of CFTs in developing the delivery performance of an organisation was also investigated.
- b) This thesis contributes to knowledge of marketing and operations integration through providing an integrated approach to the research on the interface. This approach relies on the significant relationship between cross-functional integration, CFTs, and competitive priorities. This study was built on other studies that call for an integrated marketing and operations approach (e.g. Marques et al., 2014; Piercy, 2010; Sharma, 2013; and Tang, 2010), through examining the imperative of the integrated marketing and operations strategies, and how to achieve and develop this integration by using CFTs. Furthermore, the delivery priority was also investigated as an output of the convergence between marketing and operations members within CFTs. Consequently, these main complementary issues of marketing and operations interface were brought together to be investigated at the strategic and operational levels.

- c) Much of the extant literature on marketing and operations interface has been quantitative and as a result the underlying depth of the data has been limited. This study has enabled a deeper discussion illuminated by the thickness of the qualitative data to expose new insights into the topics embedded in this thesis. By undertaking a qualitative approach here, this research allowed respondents to express concepts in their own language. Furthermore, the researcher obtained more detailed information when he probed informants, thus providing in depth insights into the marketing and operations interactions, and how to manage them for better integration. In addition, by using qualitative data collection methods: semi-structured interview and direct observation, the researcher was able to study the context of the integration in the Iraqi public textile industry sector. As a result of this, the study enables better understanding of the integration between marketing and operations in its real context. In addition, through the observation of the factories and sales centres, the researcher explored the strengths and weaknesses of the delivery performance of the two case study organisations.
- d) According to Lenz, (1980) and Miller, (1988), the fit between the organisational structure, strategy, and environment should be taken into consideration when organisations seek to develop their performance and achieve competitive advantages. As the research findings suggested, in order to compete against time in the market, market oriented companies should focus on marketing and operations integration, as an important aspect of the organisational structure. Furthermore, this integration enables these firms to respond quickly to market demand due to the collaboration and sharing information between these two core functions. This collaboration, sharing information, and rapid responsiveness represent essential components of market orientation, by which the ability of a firm to achieve time-based competitive advantage can be enhanced. Consequently, this thesis contributes to knowledge of market orientation.



#### 6.4.2 Practice

- e) Through the findings of interview and observation, this research examined the delivery performance of the two case study organisations, and identified the extent to which they need to develop their time-based capabilities, whether by marketing or operations department, to become more market oriented.
- f) The present theoretical framework can be a guideline to help the managers, particularly of marketing and operations departments in Iraqi public textile manufacturing organizations, to adopt the approaches embedded in the study for developing their delivery performance. In practice, there was a co-management system in which marketing and operations functions share their resources, knowledge, and information in the three main areas of their decisions: NPD, Planning, and delivery. However, this internal system need to be developed through using an integrated information system, by which information and knowledge can be processed and shared more efficiently and rapidly, thereby the co-management system will be more successful. In addition, there was a need to underpin the human dynamic of the managerial framework through empowering managers, particularly marketing and operations groups to be more collaborative and responsive to market information. Furthermore, using communication technology applications more efficiently and adequately by these managers may facilitate co-management leading to more effective communication and shared information for time-based competitive advantages.
- g) Through adopting this study by the Iraqi public textile sector, the time, effort, and money which are spent on developing their performance will be reduced. This is because of the focus on marketing and operation functions which significantly and directly relate to the product. Indeed, this can contribute to the development of the local textile industry in Iraq leading to improving the Iraqi economy as a result of using more production resources, such as manpower and natural raw materials (i.e. cotton and wool).

- h) This research is the first empirical study in the Iraqi context by which an in depth-investigation was conducted into the public textile organisations aiming to develop their time-based performance through utilizing CFTs. This research will open the door for more work on how to develop the competitive performance of manufacturing organisations in the different industrial sectors in Iraq.
- i) Finally, the study illuminates how the marketing operations interface functions in a different cultural arena. Extant research is very much focused on advanced economies or factories with higher degrees of technology and work sophistication, but this neglects how organizations may attempt to function in challenging circumstances, such as conflict, or post conflict zones with limited access to Western approaches, management, skills and knowledge to resource and update their practices.

## **6.5 Limitations of the Study**

During the period of this research, the main focus was on how to enrich the research framework through the literature review, and how to gather high quality data from the field to consider the study aim and objectives. Therefore, there were certain limitations in this research, as follows:

- a) There was a very limited amount of literature published on marketing and operations integration in the Arabic countries, particularly in the Iraqi context. Through reviewing the relevant literature on the integration between marketing and operations functions, the researcher found that most of the previous work was in the context of Western countries, and published in Western journals.
- b) In this research, it was difficult to gain access to the historical data regarding the study related issues in the two case study organizations because most of their reports, documents, and database were missing due to the unrest after the war in Iraq. For example, the researcher was not able to obtain the information about the historical sales of these two organisations because of the above reasons.

- c) Due to the recent unrest and war in Iraq, it was difficult to gain access to the other public textile organizations in Iraq to be selected for this research. There are many public textile manufacturing organisations in Iraq, such as Public organisation of cotton textile / Baghdad and Public organisation for clothing in Mosul, but the researcher was not able to select from those in dangerous regions.
- d) The period for collecting data from the two case study organisations was limited due to the bureaucratic procedures of the Iraqi higher education ministry and industry ministry to allow me to gather data for this study. According to the instructions of the Iraqi government, in order to collect data from the two case study organisations, the researcher had to obtain permission from the higher education ministry and industry ministry. Therefore, he was waiting for a long time to gain their consent and begin collecting data.
- e) This thesis significantly relates to the Iraqi public textile industry sector which uses CFTs, and there is a relationship between the topic and textile production system, due to the sensitivity and importance of time in this industry. Therefore, this study is limited to the public textile manufacturing organizations, and it is difficult to generalize the present theoretical propositions to the other business sectors in Iraq, which have different organizational environments and contexts.

## **6.6 Recommendations**

In this subsection, some recommendations are presented as follows:

### **6.6.1 Recommendations for the Case Study Organisations**

The two case study organisations may choose to consider the following recommendations as a guideline to help them in developing their delivery performance. In order to benefit from the use of CFTs for improving time-based capabilities, these teams should be utilized more effectively. To achieve this, the present research recommends these organisations to:

- a) Encourage the effective collaborative interactions between members of CFTs towards achieving the common goal of organization in order to avoid disagreements through adopting applications, such as effective rewards systems and training. Furthermore, the two case study organisations can use specialised experts for developing these programmes. In addition, the top management of these companies and senior managers of their factories need to support the environment of CFTs through producing adequate facilities for members to be more effective. This implication can be adopted in other organisations in the Iraqi public textile industry sector, which use CFTs. Furthermore, these companies can share the diverse experience of their teams through holding meetings, workshops, or conferences in order to increase their experience and develop their performance.
- b) Empower CFTs to become more innovative and effective when performing their tasks, through granting them more authority and autonomy to be able to make correct decisions and implement their activities without any impact from outside teams. Due to the instructions of the Iraqi industry ministry in this respect, there is a need for coordination between the top management of the two case study organisations and this ministry to identify the extent to which the authority of CFTs should be increased, and grant them an adequate authority to be consistent with their responsibilities. In addition, in order to underpin the autonomy of CFTs, information should be available for these teams in good time by using an integrated information system. This enables them to make their plans correctly and implement their tasks more effectively, without any need for help from other departments of a firm. This implication can be adopted in other companies of the public textile sector in order to benefit from the full value of CFTs, and exploit their resources more efficiently and adequately, particularly with the current position of this sector.
- c) Rethink about the importance of the joint involvement of all members within CFTs when sharing information, and distribute the information equally among these people in order to fully benefit from their diverse experience and knowledge. Furthermore, using an integrated information system by these teams will also be beneficial for this purpose. In addition, there is a need to support the horizontal communication between CFTs and other parts of organisations to be able to communicate with each other more efficiently and rapidly. This may require making some modifications in the current

hierarchy of the two case study organisations to be more agile. Due to the instructions of the industry ministry in this regard, it will be very useful if the textile sector and this ministry conduct studies to review and revise the hierarchy of firms taking into account the significance of horizontal communication. In addition, it is necessary for CFTs to adequately utilize the applications of communication technology, such as the internet, through facilities and training in order to develop their communication to become more effective and fast.

- d) Update the manufacturing technology in the stages of production lines in those factories of both case study organisations which use old machines, in order to avoid the variation in their efficiency and productivity, and its negative impact on the delivery performance of these firms. Therefore, there is a need for more effort and coordination between the top management of these companies and the Iraqi industry ministry to tackle the outdated production technology of their factories through exporting new production lines or making partnerships with global organisations. This application must involve other organisations in this sector in order to develop their performance and reduce production requirements cost. Indeed, the outdated production lines of factories in the textile sector should fully be updated.
- e) Identify and reorganize the sequential manufacturing processes or workstations which do not share production resources to be flowed in parallel in order to reduce manufacturing time. This implication can be made by CFTs through checking the flow of these processes and the arrangement of the workstations according to the distribution of resources, such as raw materials and machines, and the sequence of process.
- f) Redistribute production resources such as machines and employees on workstations in which breakdowns and bottlenecks occur in order to achieve balance in their production lines. The two case study organisations can make this implication by using CFTs to check the distribution of resources on the manufacturing processes in each stage of production lines. Furthermore, these teams may need to conduct time studies in order to maintain processes time according to the efficiency of machines due to its impact on the speed of product flow between workstations.

- g) Use appropriate transport equipment in order to handle materials rapidly across production lines in plant 6 which utilize inappropriate tools for this purpose. In addition, there is a need for adopting a maintenance system to repair the transport equipment regularly if necessary. To adopt this implication, initially, the two case study organisations need to consider the role and importance of the transport equipment to reduce manufacturing time, which is an essential part of delivery time.
- h) Utilize an information system by CFTs members, in particular marketing and operation groups as an integrated mechanism to manage and share the information of the orders between these two departments effectively to flow more accurately and quickly. To adopt this implication, the two case study organisations may need to consult specialised experts to identify the software and hardware requirements for designing and using an appropriate information system. In addition, to utilise an information system efficiently and adequately, the users of this system should be trained and facilities should be available.
- i) Use sufficient distribution channels in the target markets, and develop the performance of the sales centres in terms of organizing and packaging products in order to attract customers. This may need to adopt advanced training programmes for improving the knowledge and skills of these employees. In addition, there is a need to advertise the products and sales centres of the two case study organisations on the media such as TV, and use a more effective promotion system attracting more customers. Furthermore, CFTs need to review and revise the procedures of sales centres to reduce the unnecessary activities to be more simply and easy. This will contribute to improving marketing capabilities.
- j) Through the findings of this research, the managers in the two case study organizations will be able to identify the need for training employees in relation to the benefits of marketing and operations interface, and CFTs. This will be a good opportunity to develop skills and knowledge of people in the textile sector through the partnership between the Iraqi industry ministry and international companies for advanced training programmes, in order to keep up with the development in the global markets.

### 6.6.2 Recommendations for Future Research

As the present framework of marketing and operations integration has been developed throughout this study which touches on several areas that may need further research, this frame can be used by academics as a basis for analysing some of the issues worth researching as follows:

- a) As the use of CFTs was examined by this research as a time-based strategy which is utilized by the two case study organizations to achieve marketing and operations integration, further research can be carried out on other strategies such as ERP and CE, taking into account their relationships with the cross-functional integration. Indeed, conducting studies on using the above strategies to achieve cross-functional integration, in particular in the developing countries, such as Iraq will help to attain competitive advantages.
- b) As the delivery priority was investigated in this research as an achievement of the present framework, other competitive priorities, namely cost, quality, and flexibility, can be examined by further research in the context of marketing and operations interface, taken into consideration the differentiation between these priorities and the competitive position of an organisation. Furthermore, such research will reflect the influence of cross-functional integration on the competitive performance of a firm and its competitive position in the market.
- c) Due to the empirical support of research findings for the theoretical propositions of this study, the present conceptual framework can be generalized as an analytic generalization (Yin, 2014) on the other organizations in the Iraqi public textile industry sector. Furthermore, further research on marketing and operations integration can be carried out in the other manufacturing organizations in the Iraqi context.
- d) Comparative research could also be undertaken with: (i) other organisations in developing and (post) conflict zones, and; (ii) public sector industrial organisations, to build greater understanding and theory in relation to the marketing and operations interface via CFTs in such environments.

- e) Comparative research could also be undertaken with other similar organisations in the Middle East to ascertain cultural similarities and differences in relation to the context of this study.

## **6.7 Chapter Summary**

Overall, this chapter has underlined the major findings of this thesis regarding the four research questions, and discussed how these findings achieved the research objectives. Furthermore, a conclusion about the research findings in relation to the four phases of the framework is also presented. In addition, in this chapter, the theoretical and practical contributions, and limitations of this study are provided. The recommendations for the two case study organisations and textile industry sector, and avenues for future research are also presented and discussed in more detail.



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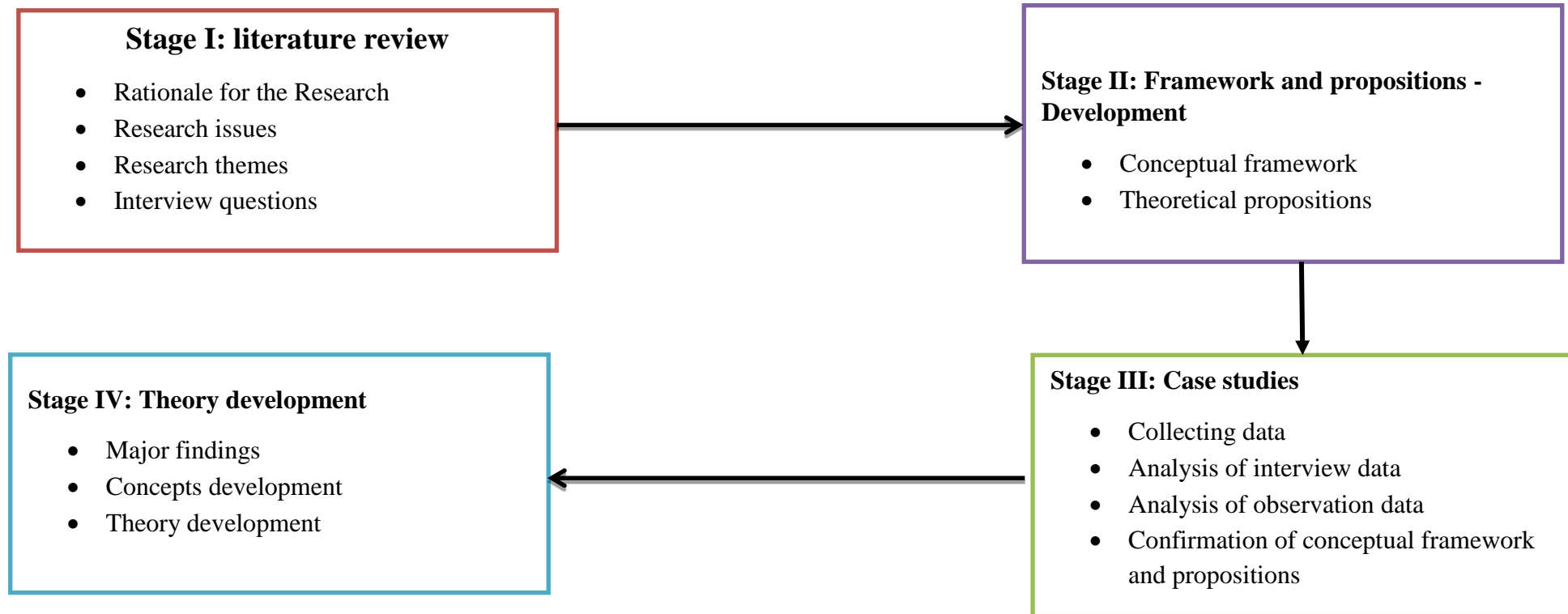
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# APPENDICES

## Appendix 1

### Main stages of research



Source: developed for this research

## Streams of research and their rationale identified in the literature of marketing and operations integration

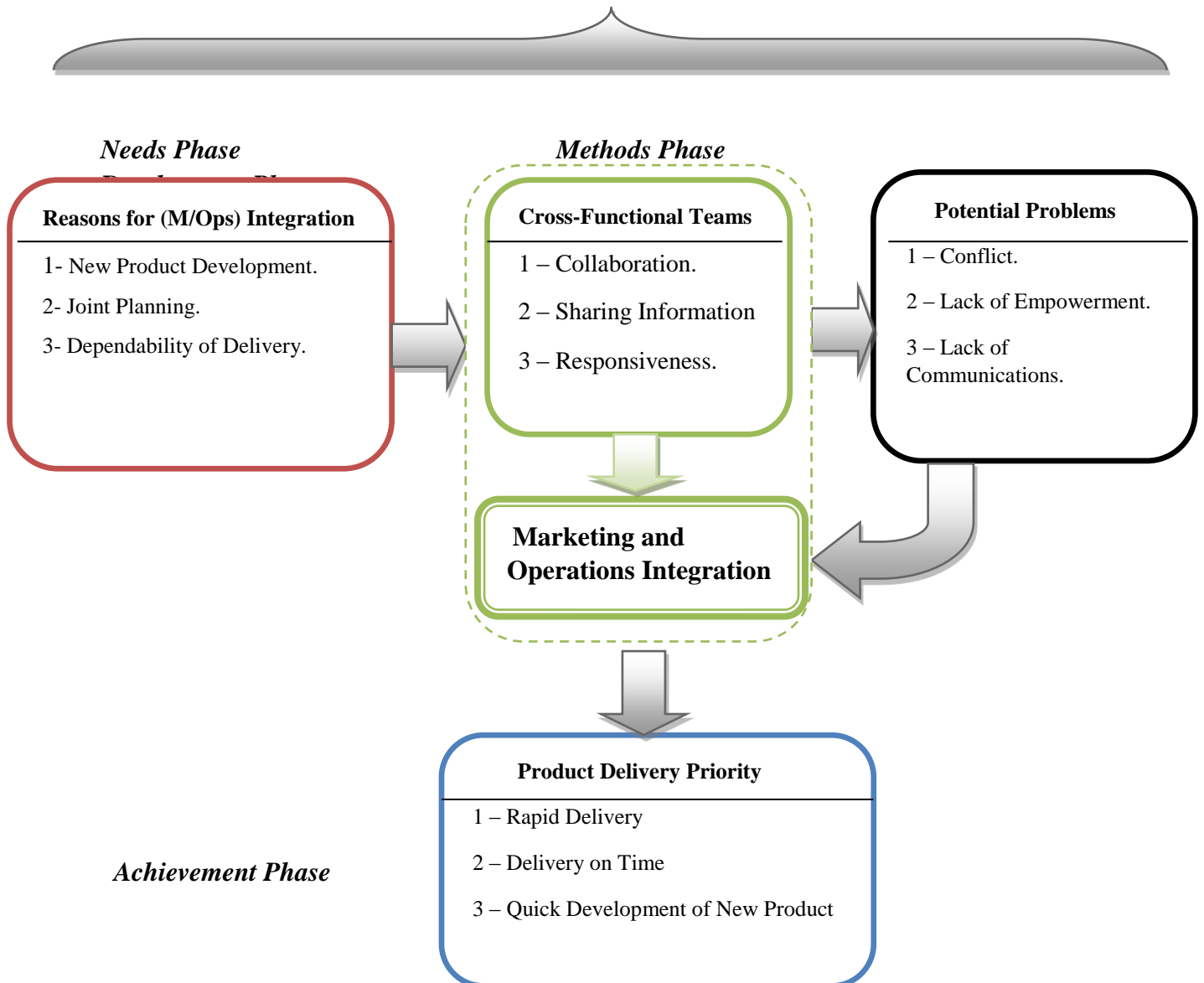
288

		Nath et al. (2010) Nguyen, & Rukavishnikova (2013) Piercy (2010) Sharma (2013) Spanner et al. (1993) Tuomikangas & Kaipia (2014) Yu et al. (2014)	Empirical Empirical  Empirical Empirical Conceptual Conceptual  Empirical	account the potential problems that could be associated with executing these mechanisms.
<b>III</b>	Analysis of factors that may impact on the effectiveness of cross-functional mechanisms	Bartosek & Tomaskova, (2013) Daspit et al. (2013) Henke et al. (1993) Holland et al. (2000) Jassawalla & Sashittal (2006) Lovelace et al. (2001) McDonough (2000) Mohsen & Eng (2013) Sivasubramanian et al. (2012) Song et al. (2010) Webber (2002)	Conceptual  Conceptual Conceptual Conceptual Empirical  Empirical Empirical Conceptual Empirical  Empirical Conceptual	Considering how to improve cross- functional integration. Around half of these studies lack any empirical evidence.
<b>IV</b>	Contribution of the convergence between marketing and operations functions to customer value	Bunduchi (2009) Kaipia (2008) Kim et al. (2010) Luca & Atuahene-Gima, (2007) Marques et al. (2014) Paiva (2010) Sawney & Piper (2002) Tatikonda & Montoya- Weiss (2001)	Empirical Empirical Empirical Empirical  Empirical Empirical Empirical Empirical Empirical	These studies do not take into consideration the trade-offs between competitive priorities (e.g., cost and product flexibility) according to the competitive position of the organization. For example, time-based firms focus on how to achieve delivery priority as an appropriate competitive priority in order to compete against time in the market through interfacing marketing with operations.

### Appendix 3

#### Conceptual Framework

##### Market Orientation



## **Appendix 4**

### **Participant Invitation Letter**

Dear .....

My name is Abdulmohsin Keshwan. I am a PhD student at Salford University in Business School under the supervision of Dr. Peter Reeves. Due to your experience in relevant field, you are invited to participate in a research project entitled (Utilising Cross-Functional Teams to achieve the Integration between Marketing and Operations for product delivery priority to be market-oriented). The purpose of this study is to investigate how to improve customer service in product delivery by the integration between marketing and operations through using cross-functional teams in Iraqi public textile manufacturing organisations. This study has been approved by the University of Salford College Ethics Panel. The researcher will use interview and observation to collect data regarding the relevant themes of study such as new product development, sales and production planning, and delivery performance by asking you few questions and conducting some observations. The researcher hopes that this information can be beneficial in achieving research objectives. There are no identified risks from participating in this research. Any gathered information will be under the condition of anonymity. The researcher will not disclose who has taken part in the study. In addition, CDs and hard files of the data collected from this study will be kept in a locked cabinet until the end of this PhD. Participation in this research is completely voluntary and you may refuse to participate. The interview will take approximately one hour to complete. Respondents will be informed that they can withdraw from this study without having to give a reason before publication and dissemination has occurred.

Thank you for your consideration. Your help is greatly appreciated. Your signature below indicates that you have read the above information and you agree to participate in this study entitled (Utilising Cross-Functional Teams to achieve the Integration between Marketing and Operations for product delivery priority to be market-oriented).

If there is any inquires, you can contact the researcher by: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Printed name:

Signature:

Date:

## **Appendix 5**

### **Participant Information Sheet**

The purpose of this study is to investigate how to improve customer service in product delivery by the integration between marketing and operations through using cross-functional teams in Iraqi public textile manufacturing organisations. In order to achieve this aim, the researcher will conduct this project on your organisation by collecting information through the interviews with marketing, operations, and R&D managers as main members of cross-functional teams. This information will be about the key issues that relate to new product development, production and sales planning, product delivery performance, and cross-functional team. The interview will be conducted face-to-face in an appropriate place for the interviewees for approximately one hour taken in account their commitments.

Additionally, the researcher will need to visit marketing and operations departments in order to gather information regarding the relevant issues of this research such as manufacturing technology and production processes flow from factories “sites” through the direct observation when permission is obtain. This information will help the researcher in answering research questions by the analysis process in order to achieve project objectives. To conduct this research, the researcher will take into consideration the following ethical provisions:

- Data will be used for the purpose of producing PhD. However, the PhD findings may also be published in academic journals, e-journals, books, practitioner journals, presentations, interviews.
- You always can contact the researcher when you have any queries about the research.
- Any gathered information will be under the condition of anonymity.
- You will not be identified, unless otherwise agreed.
- Data will be kept on the own computer of researcher that treated securely by using password and hard copy files will be kept in a safe place.
- Your name and signature are used only as a proof for my supervisors and examiners.
- Themes of observation will represent the applications of marketing, operations, and R&D managers as members of CFTs that reflect their experience which is beneficial for study.



- Research participants will be informed that they can withdraw from this study without having to give a reason before publication and dissemination has occurred.
- If participation in the observation is not possible because it will seriously disrupt business, then the observation will not be undertaken.

**PhD Student Contact:**

Abdulmohsin Keshwan  
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University of Salford  
Room 204 Maxwell building,  
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United Kingdom Tel: +44(0) 161 295 5720  
E-mail: [P.Reeves@salford.ac.uk](mailto:P.Reeves@salford.ac.uk)

## **Appendix 6**

### **Participant consent form**

The purpose of this study is to investigate how to be market-oriented through the integration between marketing and operations for developing product delivery performance of Iraqi public textile industry organisations by adopting cross-functional teams. To conduct this project on your organisation, the researcher will collect data through the interviews and direct observation.

In order to answer the research questions within the context of cross-functional teams to achieve the objective of present study, the researcher will interview marketing, operations, and R&D managers as main members of cross-functional teams within the case study organisations. The interviews will be tape recorded with the potential interviewee's permission. The disseminated results will keep the names anonymous. Participants can withdraw from study without having to give a reason.

Name of organisation: .....

Name of interviewee: .....

Interview date: .....

Interview place: .....

Interviewee signature: .....

## Appendix 7

University of  
**Salford**  
MANCHESTER

College of Arts & Social Sciences  
Room 633 Maxwell Building  
The Crescent  
Salford, M5 4WT  
Tel: 0161 295 5876

28 October 2014

Abdulmohsin Keshwan  
University of Salford

Dear Abdulmohsin

Re: Ethical Approval Application - CASS130045

I am pleased to inform you that based on the information provided, the Research Ethics Panel have no objections on ethical grounds to your project.

Yours sincerely

Deborah Woodman  
On Behalf of CASS Research Ethics Panel

## Appendix 8

### Consent form for observation

The purpose of this study is to investigate how to develop customer service in delivering product through the integration between marketing and operations in Iraqi public textile industry organisations by adopting cross-functional teams (CFTs). In order to achieve the objective of present research, the researcher will observe the real situation of environmental conditions of marketing and manufacturing which significantly relate to the study within the applications of CFTs.

Notes will be taken during the visits of the researcher to the manufacturing and marketing departments and when permission is obtained also he will use a camera if possible to take photos from the field. In addition, the information gathered will be treated securely and will not be shared with anyone else. The published results will keep the names anonymous. If the observation is not possible, it can be stopped at any time.

Name of organisation: .....

Name of factory's manager: .....Signature.....

Name of marketing's manager: ..... Signature .....

Name of manufacturing's manager: ..... Signature.....

Name of research and development's manager: .....

Signature.....

Date: .....

**Appendix 9**  
**Interview Protocol**  
**Semi-structured interviews questions (Protocol)**

**I. Introduction**

The researcher opens the interview by clarifying the following:

- Background of the research topic
- Why this topic being researched
- Why the organisation has been chosen
- The individuals who will be interviewed and why
- The expected time for the interview
- The confidentiality of information gathered
- Any health and safety or security issues

**II. Participant information**

- Organisation .....
- Name.....Gender.....
- Position.....
- Qualifications.....
- Years of service.....Years in this position.....

**III. Interview Questions**

Q1: How does marketing and operations work together in developing new product?

Q2: How does marketing and operations work together in making plans and decisions?

Q3: How does marketing and operations work together to achieve the dependability of delivery?

Q4: How does Collaboration through cross-functional team influence the integration between marketing and operations?

Q5: How does information sharing through cross-functional team affect the relationship between marketing and operations?

Q6: How does cross-functional team influence responsiveness to information in order to meet customer needs? And how does this responsiveness affect marketing and operations relationship?

Q7: How do you view the relationship between members of cross-functional team in your organisation?

Q8: How do you view the authority and autonomy of cross-functional teams in your company?

Q9: How do you view the communications among the members of cross-functional team and with other parts of your organisation?

Q10: According your view, how can delivery time be impacted by using cross-functional teams in your company?

Q11: In your opinion, how can product be delivered on time through adopting cross-functional teams in your organisation?

Q12: How does the use of cross-functional teams in your company influence new product development time?

**Appendix 10**  
**Observation Protocol**  
**Direct observation points (Protocol)**

**I. Introduction**

In order to conduct the observation, the researcher gives an explanation to research participants by clarifying the following:

- Background of the research topic
- Why this topic being researched
- Why the organisation has been chosen
- The individuals who will be observed and why
- The expected time for the observation
- The anonymisation of information gathered
- Any health and safety or security issues
- Any impact of observation on workflow in field.

**II. Participant information**

- Organisation .....
- Name.....Gender.....
- Position.....
- Qualifications.....
- Years of service.....Years in this position.....

**III. Observation Points**

The researcher will directly observe the following themes which related to the topics of this study in field. To record this observation, field notes will be taken in more detail as immediately as possible by utilising a field study observation form and a camera will be used if possible (DeWalt and DeWalt, 2011).

- 1) Factory layout
- 2) Production technology
- 3) Production processes follow
- 4) Production line balance
- 5) Materials handling
- 6) Finished product



## **Appendix 11**

**Ministry of Higher Education  
and Scientific Research  
UNIVERSITY OF KUFA**

**Dept.:  
Ref: 18897  
Date: 04 / 08 / 2014**

**To / The Public Organisation of Textile industries in Hilla  
Re / Task Facilitating**

Good Greeting

We would like to inform you that the lecturer (Abdalmohsin Jawad AbdulHussein) is a PhD student in Britain. In order to collect data regarding his marked research (Utilising Cross-Functional Teams to achieve Marketing and Operations Integration for Deliver Priority), Please facilitate his task.

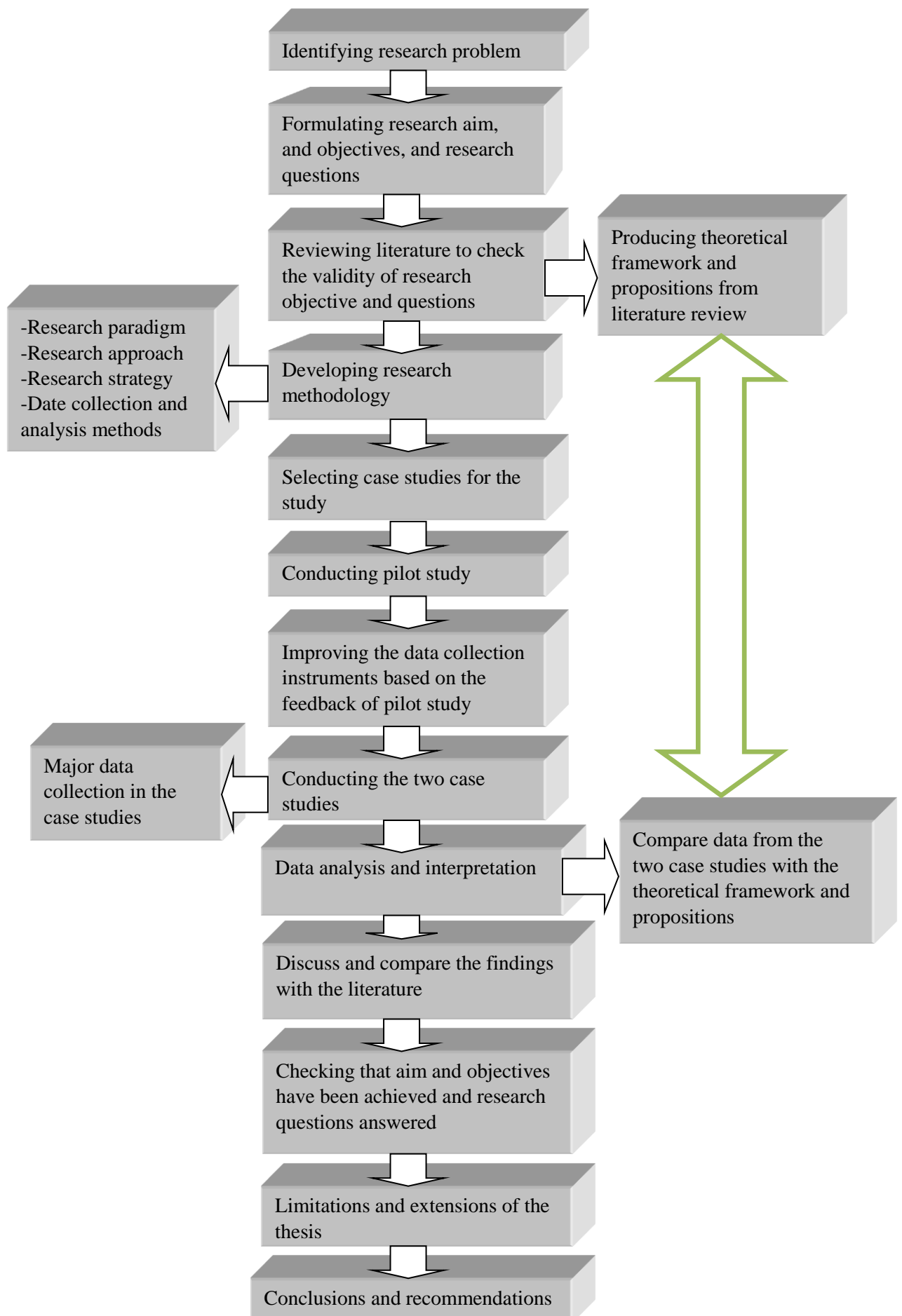
Yours faithfully

Assistant Prof.  
Hassan Hadi Al-Alak

**A copy for:**

The Public Organisation of Textile industries in Wasit

## Appendix 12 Case study research design



## Appendix 13

### Theoretical statement

Phases	Research Questions	Main Theme	Interview Questions	Literature Citation	Theoretical Propositions
<b><u>First Phase</u></b> The Needs	1/ Why should marketing and operations groups work together?	New product development	Q1: How does marketing and operations work together in developing new product?	Clark & Wheelwright, (1993); Hausman et al., (2002); Calantone et al., (2002); Song and Swink, (2002); Gonzalez et al., (2004); Guenzi and Troilo, (2006); Swink & Song, (2007); Brettel et al., (2011)	P1/ Due to the interdependent tasks of marketing and operations people, the two groups work together in order to develop new product successfully and rapidly.
		Joint planning	Q2: How does marketing and operations work together in making plans and decisions?	Konijnendijk, (1994); Fisher, (1997); Lee & Tang, (1997); Parente, (1998); Hausman et al., (2002); Malhotra and Sharma, (2002); Tang, (2010); Brettel et al., (2011); Berglund et al., (2011); Tavares Thome et al., (2012); Sharma, (2013)	P2/ Because of the uncertainty of manufacturing environment internally and externally, marketing and operations groups work together to achieve the conformity between their plans and decisions.

		Dependability of delivery	Q3: How does marketing and operations work together to achieve the dependability of delivery?	Shapiro, (1977); Azzone et al., (1991); Crittenden et al., (1993); Prabhaker, (2001); Sawney and Piper (2002); Hausman et al., (2002); Droge et al., (2004); Slack et al., (2009); Kim et al., (2010); Lin et al., (2012)	P3/ Due to the significant impact of marketing and production capabilities on delivery, the dependability of delivery can be attained when marketing and operations people work together.
<b><u>Second Phase</u></b>  The Methods	2/How can the integration between marketing and operations functions be achieved by using CFTs?	Collaboration	Q4: How does Collaboration and coordination through cross-functional team influence the integration between marketing and operations?	Griffin & Hauser, (1996); Parry, (1997); Webber, (2001); Song & Swink, (2002); Jassawalla & Sashittal, (2006); De Luca & Atuahene – Gima, (2007); Swink and Song, (2007); Troy et al., (2008); Hirunyawipada et al., (2010); Brettel et al., (2011); Bendoly et al., (2012); Tsai & Hsu, (2013)	P4/ The integration between marketing and operations functions could be achieved due to the collaboration among members of cross-functional teams.

		Sharing information	Q5: How does information sharing through cross-functional team affect the relationship between marketing and operations?	(Slack et al., 2013); (Brettel et al., 2011); (Song & Swink, 2002); (Tang, 2010) Mohsen, (2013)	P5/ The integration between marketing and operations functions can be attained when sharing information among members of cross-functional teams.
		Responsiveness	Q6: How does cross-functional team influence responsiveness to information in order to meet customer needs? And how does this responsiveness affect marketing and operations relationship?	Hart, & Kahn, (1996); Griffin, (1997) Denison, Lovelace et al., (2001); Song & Swink, (2002); Parker, (2003); Gonzalez et al., (2004); Horwitz, (2005); Jassawalla and Sashittal, (2006); Brettel et al., (2011); Bruns, (2013); Dasgupta et al., (2013)	P6/ The responsiveness of cross-functional teams can contribute to achieve the integration between marketing and operations functions.

Phases	Research Questions	Main Theme	Interview Questions	Literature Citation	Theoretical Propositions
<b><u>Third Phase</u></b>  The Development	3/ What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?	Conflict	Q7: How do you view the relationship between members of cross-functional team in your organisation?	McCorcle, (1982); Ashforth & Mael, (1989); Kramer, (1991); Crittenden et al., (1993); Holland et al., (2000); Calantone et al., (2002); Parker, (2003); Majchrzak et al., (2012); Daspit et al., (2013); Nguyen & Rukavishnikova, (2013)	P7/ The effectiveness of cross-functional teams can negatively be influenced if there is a conflict between their members.
		Lack of empowerment	Q8: How do you view the authority and autonomy of cross-functional teams in your company?	Henke et al., (1993); Trent and Monczka, (1994); Denison et al., (1996); Jasawalla & Sashittal, (1998); Holland et al., (2000); Parker, (2003); Nguyen & Rukavishnikova, (2013)	P8/ Cross-functional teams can be ineffective if they have limited authority and autonomy.

		Lack of communications	Q9: How do the members of cross-functional team communicate among themselves and with other parts of your organisation?	Holland et al., (2000); Lovelace et al., (2001); Leenders et al., (2003); Parker, (2003); Hoegl, (2005); Kim et al., (2006); Majchrzak et al., (2011); Lalsing et al., (2012); Kotlarsky et al., (2012); Nguyen and Rukavishnikova, (2013)	P9/ If there is lack of communications between members of cross-functional teams and with other parts of company, they can be ineffective.
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Phases	Research Questions	Main Theme	Interview Questions	Literature Citation	Theoretical Propositions
<b><u>Fourth Phase</u></b> The Achievement	4/ How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?	Rapid delivery	Q10: According your view, how can delivery time be impacted by using cross-functional teams in your company?	Handfield & Pannesi, (1992); Spanner et al.,(1993); Hum & Sim, (1996); Johnson & Busbin, (2000); Parker, (2003); Droge et al., (2004); Lin et al., (2012)	P10/ The delivery performance of Iraqi public textile companies can be developed as a result of the contributions of using cross-functional teams to reduce delivery time.
		Delivery on time	Q11: In your opinion, how can product be delivered on time through adopting cross-functional teams in your organisation?	Handfield & Pannesi, (1992); Spanner et al.,(1993); Hum & Sim, (1996); Johnson & Busbin, (2000); Parker, (2003); Droge et al., (2004)	P11/ The delivery performance of Iraqi public textile companies can be improved because of the positive effect of utilising cross-functional teams on the reliability of delivery.



		Quick development of new product	Q12: How does the use of cross-functional teams in your company influence new product development time?	Azzone et al ., (1991); Spanner et al., (1993); Hum & Sim, (1996); Jayaram et al., (1999); Sim and Curatola, (1999); Johnson & Busbin, (2000); Sanchez & Perez, (2003); Parker, (2003); Droge et al., (2004); Lin et al., (2012)	P12/ The delivery performance of Iraqi public textile companies can be developed due to the contributions of adopting cross-functional teams to develop new product rapidly.
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## Appendix 14

### Demographic data of interviewees

Case study Organisation	Factory	No	Participants' Personal Details			
			Gender	Position	Years of Experience	Academic Qualifications
Case A	F1	1	Male	Operations manager	25	BSc
		2	Male	Marketing manage	12	BSc
		3	Male	R&D manager	33	BSc
	F2	4	Male	Operations manager	28	BSc
		5	Male	Marketing manage	34	BSc
		6	Male	R&D manager	16	Higher Diploma
	F3	7	Male	Operations manager	24	BSc
		8	Female	Marketing manage	15	BSc
		9	Female	R&D manager	17	BSc
	F4	10	Male	Operations manager	29	BSc
		11	Male	Marketing manage	38	BSc
		12	Male	R&D manager	15	BSc
Case B	F5	13	Male	Operations manager	18	BSc
		14	Male	Marketing manage	20	BSc
		15	Male	R&D manager	25	BSc
	F6	16	Male	Operations manager	28	BSc
		17	Male	Marketing manage	26	High School
		18	Male	R&D manager	15	BSc
	F7	19	Male	Operations manager	21	BSc
		20	Male	Marketing manage	16	Diploma
		21	Male	R&D manager	35	BSc

## Appendix 15

### Statement of the points of observation and its justification

Study's objective	Themes	Elements of observation	Justification	Citation
To investigate the product delivery performance of public textile manufacturing organisations in Iraq which utilize cross-functional teams.	<ul style="list-style-type: none"> <li>▪ Delivery time</li> <li>▪ Delivery on</li> <li>▪ New product development time</li> </ul>	1) Factory layout	Factory layout plays an important role in reducing production complexity and time consumption in manufacturing thus delivery time shorter. Decision about how to organise production resources can be better if there is integration between marketing and operations groups when they work together as a team.	(Stalk, 1988) (Stalk & Hout, 1990) (Prabhaker, 2001) (Song & Swink, 2002) (Brethauer, 2002)

Study's objective	Themes	Elements of observation	Justification	Citation
		2) Production technology	<p>By adopting new technology, manufacturers can improve their delivery performance when they become fast innovators. Also manufacturing time can be reduced through utilizing advance techniques such as computer-aided design/ engineering (CAD) and (CAE).</p> <p>In addition, using these time-based strategies can leads to support and develop marketing capabilities in delivering product.</p> <p>This decision can be made when there is a convergence between marketing and operations groups as members of cross-functional teams.</p>	<p>(Stalk &amp; Hout, 1990)  (Prabhaker, 2001)  (Song &amp; Swink, 2002)  (Brethauer, 2002)  (Droge et al., 2004 cited in Lin et al., 2012) (Lin et al., 2012)</p>

Study's objective	Themes	Elements of observation	Justification	Citation
		3) Production processes follow	Production processes flow was observed to identify the extent to which activities are arranged sequentially and the extent to which they are arranged in parallel. If the first activities do not share production resources, that means they can be rearranged in parallel in order to reduce manufacturing time. This can be achieved when operations members of cross-functional team seek to enhance marketing capabilities in delivery because they understand the dynamic nature of market demand.	(Stalk & Hout, 1990) (Prabhaker, 2001) (Song & Swink, 2002) (Brethauer, 2002) (Slack et al ., 2009)

Study's objective	Themes	Elements of observation	Justification	Citation
		4) Production line balance	The researcher focused on this point, to observe whether the distribution of production resources is balanced or imbalanced. If this distribution is imbalanced, delays and bottlenecks can be occurred in production line. This point significantly impacts on manufacturing time and production schedules. Therefore, operations personnel as members of (CFTs) are more likely to effectively address the appropriate distribution of production resources. This is also another advantage of interfacing marketing with operations.	(Stalk & Hout, 1990) (Prabhaker, 2001) (Song & Swink, 2002) (Brethauer, 2002) (Slack et al ., 2009)

Study's objective	Themes	Elements of observation	Justification	Citation
		5) Materials handling	<p>Factories need to use appropriate transporting equipment for handling materials in production line in order to reduce manufacturing time.</p> <p>In addition, this equipment should be suitable for production layout.</p> <p>Therefore, operations members of (CFTs) seek to improve process capability in handling materials through using the right transporting equipment in the right way for the right materials.</p>	<p>(Stalk &amp; Hout, 1990)</p> <p>(Prabhaker, 2001)</p> <p>(Song &amp; Swink, 2002)</p> <p>(Brethauer, 2002)</p> <p>(Slack et al ., 2009)</p>

Study's objective	Themes	Elements of observation	Justification	Citation
		6) Finished Product	Managing demand has significant impact on delivery performance. This depends on how to deal with orders. As a result of the convergent between members of (CFTs), marketing people can benefit from the advantages of reducing manufacturing time when they deal effectively with customer orders. This can be achieved when delivering product at the right price in the right place at the right time.	(Azzone et al. 1991) (Tammela et al. 2008) (Lin et al. 2012) (Kotler & Armstrong, 2012)



**Appendix 16**  
**Field Study Observation Form**

*Field Note No:*

*Date:*

*Time start:*

*Location:*

*Time stop:*

*Occasion:*

Description	Interpretation	Concepts/ Theme

## Appendix 17

### Coding on transcription of collected data by interviews

<b>RQ1: Why marketing and operations groups should work together?</b>		
<b>Meta-codes</b>	<b>Codes</b>	<b>Quotes</b>
<b>1. New Product Development</b>	<b>I - Identifying customer preferences.</b>  (R2, P. 6- R4, P. 14- R5, P. 18- R6, P. 22- R7, P. 26- R8, P. 30- R9, P. 34- R12, P. 46- R13, P. 50- R14, P. 54- R16, P. 63- R17, P. 67- R19, P75- R20, P 79).	<p>“Implementing new product development process begins with defining customer needs by marketing and operations people together. Marketing people gather information from markets about customers and competitive products to share and discuss this information with manufacturing personnel in order to determine what customers need and want.” (R5)</p> <p>“In my organisation, marketing management uses employees from marketing and operations departments within a team for collecting information about customer expectations and competitors from the local markets. Furthermore, this information is utilised by marketing and operations groups to determine what customers prefer in order to satisfy these preferences through developing new products.” (R13)</p> <p>“Due to the close relationship between marketing personnel and customers, they can provide accurate market information for operations personnel in due season to be shared and discussed by the two groups to understand what customers need. According to this understanding, they can develop the characteristics of a new product. For this purpose, my organization encourages marketing people to collect accurate information from the market place through granting them rewards.” (R14)</p>

	<p><b>II - Sharing experience, resources, and points of view.</b></p> <p>(R1, P. 1- R2, P. 6- R3, P. 10- R6, P. 22- R8, P. 30- R9, P. 34- R10, P. 38- R15, P. 58- R17, P. 67- R20, P. 79- R21, P. 83).</p>	<p>“In my organization, there is collaboration between marketing and operations groups to develop new products through sharing their experience, sources, and opinions. This sharing helps them to generate new ideas for making changes in the specifications of products and processes in order to meet customers’ expectations. In addition, the close informal relationships among these personnel underpin their abilities to benefit from their experience and resources together.” (R6)</p> <p>“The diversity of knowledge and expertise of marketing and operations people can be more beneficial in developing new products when the two groups are collaborative in exchanging their various experiences and views. Thus this sharing will be an important resource for developing the integrated knowledge of these people.” (R8)</p> <p>“In the NPD process, sharing different experiences and ideas between marketing and operations personnel can lead to innovation which is essential for designing new products or making modifications in existing products in order to satisfy customers’ needs.” (R15)</p> <p>“Sharing experience and knowledge between marketing and operations personnel when developing new products can be a good opportunity to learn from each other. This learning can contribute to enhancing the ability of these people to develop new products frequently and rapidly.” (R17)</p>
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	<p><b>III - Developing a new product's characteristics</b></p> <p>(R2, P. 6- R4, P. 14- R6, P. 22- R7, P. 26-R8, P. 30- R10, P. 38- R11, P. 42- R12, P. 46- R14, P. 54- R15, P. 58- R16, P. 63- R17, P. 67- R18, P. 71- R19, P. 75- R20, P. 79).</p>	<p>“As a result of the collaboration between marketing, operations, and R&amp;D people through exchanging and analysing market and production information among them, they can satisfy customers’ expectations by improving innovative product design. The underlying reason behind this innovation is the ability of these groups to translate market needs into production capabilities adequately and efficiently.” (R7)</p> <p>“Through exchanging the information and knowledge among marketing and operations groups, these people will share their understanding about customers’ preferences, competitive products, and production resources clearly. This can help them to improve the characteristics of existing products jointly as their customers need and want.” (R10)</p> <p>“Due to the collaboration and participation between marketing and operations groups through exchanging their views and experience, creative ideas could be generated to improve new design and features of products according to the production capabilities of the company. Therefore, these personnel share their different points of view in their regular and irregular meetings to discuss how to develop new products according to their shared information.” (R18)</p> <p>“Through understanding the competition and customers in the market place correctly by marketing group, R&amp;D personnel can develop new designs of products and processes successfully according to this understanding. This development relies on the ability of operations people to improve their resources for manufacturing the new products.” (R20)</p>
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	<p><b>IV - Fulfilling production requirements</b></p> <p>(R1, P. 1- R2, P. 6- R3, P. 10- R4, P. 14- R5, P. 18- R7, P. 26- R8, P. 30- R11, P. 42- R14, P. 54- R15, P. 58- R18, P. 71- R20, P. 79- R21, P. 83).</p>	<p>“In order to develop new product design, operations personnel need to define and employ production resources that may require making some modifications in production lines. Furthermore, in my company, the decisions on the modifications of production capabilities are often made by the marketing and operations groups together.” (R4)</p> <p>“Operations people can be collaborative with the marketing group to develop and manufacture new products when they identify and utilise tactical requirements such as machines and materials efficiently and adequately. This may require some changes in the production line in order to meet market demand.” (R11)</p> <p>“The operations group, in turn, translates the new characteristics of existing products into production capabilities and facilities through adopting an efficient production system and making some modifications in manufacturing resources as required for producing the new product before competitors. In this respect, using new technology in the factory can enhance the ability of the operations group to respond to the new design of product.” (R14)</p>
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Meta-codes	Codes	Quotes
<b>2. Joint Planning</b>	<b>I - Sharing information</b>  (R1, P.1- R2, P. 6- R3, P. 10- R4, P. 14- R5, P. 18- R6, P. 22- R7, P. 26- R8, P. 30- R9, P. 34- R10, P. 38- R11, P. 42- R13, P. 50- R15, P. 58- R16, P. 63- R17, P. 67- R18, P.71- R20, P.79- R21, P. 83).	<p>“Marketing and operations personnel need to share their understanding about market demand and manufacturing requirements to be able to make their plans jointly. In order to achieve this understanding, these two functions should exchange their information. In my company, regular reports, standard forms, and a database are used by marketing and operations departments to share their information when they want to make planning decisions.” (R3)</p> <p>“Due to the different responsibilities of marketing and operations functions, they tend to make their plans separately. Therefore, there is a need to achieve the convergence between the two departments through sharing their information to be able to work together in this process.” (R21)</p>

	<p><b>II- Utilizing integrated information systems</b></p> <p>(R1, P. 1- R4, P. 14- R5, P. 18- R6, P. 22- R8, P. 30- R10, P.38- R14, P. 54- R15, P. 58- R17, P. 67- R18, P. 71-R21, P. 83).</p>	<p>“Making plans by marketing and operations departments jointly depends on their ability to manage and share their information efficiently to be accurate, coordinated, and available in good time. This ability can be enhanced through utilizing an effective information system by the two groups together, which is valuable for planning.” (R4)</p> <p>“Marketing and operations departments can make correct plans through using information system jointly by which the potential errors and variations could be reduced when implementing this process. The reason for this is the important role of this system in coordinating information and increasing its accuracy. In my organization, there is a need for information system to process the huge amount of marketing and operations information to be more coordinated.” (R5)</p> <p>“The use of an information system by marketing and operations personnel is critical for making their plans together due to its contribution to dealing with the huge amount of their information effectively to be more beneficial in this respect.” (R18)</p> <p>“By sharing information among marketing and operations people about the market and production, they can implement planning activities and make planning decisions together. But these plans and decisions can be more accurate and clear if these two groups utilize an information system together to process their information efficiently.” (R21)</p>
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	<p><b>III- Exchanging knowledge and experience</b></p> <p>(R2, P. 6- R3, P. 10- R4, P. 14- R5, P. 18- R6, P. 22- R9, P. 34- R10, P. 38- R15, P. 58- R16, P. 63-R19, P. 75- R20, P. 79)</p>	<p>“Marketing and operations functions can implement their planning activities together when they share their expertise and knowledge between them to be more beneficial in this respect. This development can be a great help for joint planning and reducing problems that may happen between them.” (R2)</p> <p>“The coordination between marketing and operations groups to make plans and their decisions jointly can be developed when they benefit from the diversity of their knowledge and experience about market demand and production resources of the company. In my organization, there are meetings for making sales and production plans by marketing and operations people together who discuss their plans according to their experience and knowledge in this regard.” (R9)</p> <p>“Due to the interdependency between marketing and operations functions, the collaborative planning activities of these people require an exchange of their expertise and knowledge regarding market requirements and manufacturing facilities in order to make correct plans and decisions for both.” (R19)</p>
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	<p><b>IV - Resolving production schedules problems</b></p> <p>(R1, p. 1- R4, P. 14- R7, P. 26- R12, P. 46- R15, P. 58- R18, P.71- R21, P. 83)</p>	<p>“Due to the collaborative work of marketing and operations departments when they make plans and decisions for resources, these two groups can discuss the problems of scheduling production together and find rapid solutions to these problems to be solved early.” (R1)</p> <p>“As a result of the collaborative planning activities of marketing and operations, they can resolve production schedules problems jointly. In this organization, operations personnel review daily reports of the factory in order to define production problems early, and if there is any problem or delay in production schedules, they will come together with the marketing group in a meeting to tackle this problem.” (R12)</p>
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Meta-codes	Codes	Quotes
<b>3. Dependability of Delivery</b>	<b>I - Production technology</b>  (R1, P. 2- R2, P. 6- R3, P. 10- R4, P. 15- R6, P. 22- R7, P. 26- R8, P. 30- R10, P. 38- R12, P. 46- R13, P. 50- R14, P. 54- R17, P.67- R18, P.71- R19, P. 75- R21, P. 83).	<p>“To achieve the dependability of delivery, the production group needs to reduce time consumption of manufacturing processes in order to improve the ability of marketing personnel to deliver products to customers quickly. This can be attained by adopting advanced technological applications in the factories. For example, in my organization, the productivity increased and delivery time decreased when using new machines due to the high technology of these machines.” (R1)</p> <p>“Customers can receive their orders quickly or on time if the production group produce these orders rapidly. This can be achieved when increasing the productivity by utilizing new technology in the plants. For example, using computer programmes in designing and manufacturing products contributes to avoiding the bottlenecks, breakdowns, and delays in production lines.” (R2)</p> <p>“Production groups can be collaborative with marketing people in achieving the dependability of delivery when the operations department compresses manufacturing time through the adoption of new technology such as using the computer in a production line. By this, productivity can be increased and customer demand can be met rapidly.” (R13)</p> <p>“For improving delivery capabilities of firms, designing and manufacturing time should be reduced through automatic machines being utilized by the operations department, who use a computer to accelerate processes, thus delays will be avoided.” (R14)</p>

	<p><b>II - Product distribution systems</b></p> <p>(R1,P.2- R3,P.10- R5,P.18- R6, P. 22- R7, P. 26- R8, P. 30- R9, P. 34- R16, P. 63- R17, P. 67- R18, P. 71).</p>	<p>“The marketing group can contribute to satisfying customers in delivering products when distributing products quickly through using a distribution system effectively in terms of procedures, communication, and performance of distributors. Furthermore, in order to deliver products to customers rapidly in the right place to be satisfied, distribution channels should be adequate.” (R7)</p> <p>“Companies can achieve the dependability of delivery when decreasing manufacturing time in the factory, but these firms can waste this advantage if they use the distribution system ineffectively or adopt distribution procedures that are time consuming.” (R8)</p> <p>“An effective distribution programme of products plays an important role in delivering products to customers on time and in the right place. In other words, implementing distribution procedures rapidly and simply as well as using adequate distribution channels can help to decrease delivery time, thus dependability of delivery.” (R17)</p>
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	<p><b>III - Time-based practices</b></p> <p>(R3, P. 10- R4, P. 15- R5, P. 18- R8, P. 30- R9, P. 34- R11, P. 42- R13, P. 50- R15, P. 59- R20, P. 79-R21, P. 83).</p>	<p>“Marketing people depend on the production group in satisfying customers in delivering products when accelerating processes and performing activities quickly in production lines. In addition, adopting an effective maintenance system for manufacturing machines plays an essential role in avoiding delays.” (R4)</p> <p>“To reduce time consumption in production lines, operations people need to eliminate unnecessary steps of manufacturing processes and avoid wasted time through adopting innovative design of processes and developing the performance of employees. This can contribute to developing the delivery capabilities of the marketing department.” (R13)</p>
	<p><b>IV - Information technology</b></p> <p>(R2, P. 6- R5, P. 18- R8, P. 30- R9, P. 34- R16, P. 63- R17, P. 67- R20, P. 79- R21, P. 83).</p>	<p>“Due to the importance of information flowing quickly between marketing and operations functions to deliver products on time, adopting information technology by the two groups is critical to dealing with customers’ orders effectively and rapidly. For example, communicating information between distributors and manufacturers by using the internet or other applications of information technology contributes to delivering products on time.” (R5)</p> <p>“The delivery capabilities of firms can be improved when adopting information technology applications, for example using the applications of the internet by marketing and operations personnel for managing orders information between them effectively and quickly.” (R20)</p>

<b>Q2: How can the integration between marketing and operations functions be achieved by using CFTs?</b>		
<b>Meta-codes</b>	<b>Codes</b>	<b>Quotes</b>
<b>4. Collaboration</b>	<p><b>I - Sharing efforts, experience, and resources</b></p> <p>(R1, P. 2- R7, P. 27- R8, P. 31- R9, P. 35- R11, P. 43- R12, P. 47- R14, P. 55- R15, P. 59- R16, P. 64- R17, P. 68- R18, P.72- R20, P. 80).</p>	<p>“In order to achieve the goals of CFTs, the departments of members allow them to use and share their diverse resources. This collaboration among different functions helps to remove functional boundaries between marketing and operations areas, thus the integration between the two groups can be attained. In addition, the relationship among members of CFTs such as marketing and operations personnel can be developed through sharing their resources.” (R7)</p> <p>“As a result of exchanging the expertise and knowledge among CFTs members, the experience of marketing and operations groups could be increased by learning more from this sharing. This contributes to the convergence between the ideas and views of marketing and production groups.” (R9)</p> <p>“As a result of the diversity of resources and experiences of CFTs, people of these teams will effectively be collaborating to benefit from this diversity through sharing their sources and experience among them. This sharing encourages marketing and operations to work together in order to improve their competitive capabilities.” (R14)</p>

	<p><b>II - developing marketing and operations capabilities</b></p> <p>(R3, P.11- R5, P.19- R6, P.23- R8, P.31- R9, P.35- R10, P.39- R11, P.43- R12, P.47- R14, P.55- R16, P.64- R18, P.72- R19, P. 76- R21, P. 84).</p>	<p>“People of CFTs can be innovative due to the collaboration among them and their diverse expertise. As a result of this innovation, marketing and operations members can achieve the integration between their capabilities to be improved and directed towards achieving the firm's goals.” (R3)</p> <p>“The collaborative activities of CFTs contribute to develop marketing and production competitiveness when members of the two functions share their efforts, sources and knowledge. Consequently, market demand will be satisfied by production sources of company, thus marketing and operations interface.” (R21)</p>
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	<p><b>III - Reducing or avoided conflict</b></p> <p>(R2, P.7- R4, P.15- R6, P.23- R8, P.31- R9, P.35- R11, P.43- R13, P.51- R15, P.59- R17, P.68).</p>	<p>“Despite marketing and operations people striving to achieve their functional objectives, they can work together within CFTs to attain the firm's goals through their collaboration. Through the clear and shared understanding of the goals and tasks of CFTs, all members can avoid the disagreements between them. In addition, good informal relationships can be generated among marketing and operations groups and positively impacted their joint work.” (R2)</p> <p>“The collaboration between members of CFTs contributes to achieving the objectives of marketing and operations functions through improving their experience and performance due to their diverse knowledge and backgrounds. As a result of these benefits, members of the two groups will be satisfied when they work together. This satisfaction of marketing and operations personnel can help companies to reduce or avoid disagreements among these people.” (R15)</p>
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Meta-codes	Codes	Quotes
<b>5. Sharing Information</b>	<b>I - Integration of information</b>  (R1, P.2- R2, P.7- R5, P.19- R6, P.23- R7, P.27- R8, P.31- R9, P.35- R11, P.43- R15, P.59- R16, P.64- R17, P.68 - R18, P.72- R19, P. 76- R21, P. 84).	<p>“Through sharing information between members of CFTs, operations personnel recognize customer preferences correctly, and marketing people understand production resources. As a result of this sharing, the information held by marketing and operations groups will be integrated, thus they can perform their tasks efficiently and effectively. This can positively influence the collaborative activities such as marketing and production planning, and reduce disagreements between them. For example, in this factory, the two groups share their information through the monthly reports and forms.” (R1)</p> <p>“Information held by CFTs’ members can be integrated if they share it among them to be more beneficial for members such as marketing and operations personnel when making their plans and decisions jointly. In addition, this integrated information helps to reduce the conflict between the two groups, because they will understand each other clearly in terms of market demand and manufacturing requirements.” (R17)</p>



	<p><b>II - Efficiency of performance</b></p> <p>(R1, P.2- R3, P.11- R4, P.15- R5, P.19- R6, P.23- R7, P.27- R10, P.39- R11, P.43- R12, P.47- R13, P.51- R14, P.55- R16, P.64- R17, P.68- R18, P.72).</p>	<p>“By exchanging information among members of CFTs, the two groups can perform their tasks efficiently because they will benefit from their shared understanding about market demand and production capabilities. As a result of this, disagreements between these people will be reduced or avoided. In this plant, members of CFTs share their information between them through their reports and some forms as well as the database.” (R4)</p> <p>“Sharing information through CFTs helps to improve performance of marketing and operations members because of the integration of this information. Furthermore, these two groups can coordinate their tasks effectively when exchanging their information. This coordination can positively influence marketing and operations performance.” (R16)</p>
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	<p><b>III - Coordination of tasks</b></p> <p>(R3, P.11- R5, P.19- R8, P.31- R9, P.35- R10, P.39- R14, P.55- R16, P.64- R19, P. 76- R20, P. 80).</p>	<p>“Marketing and operations departments depend on each other when performing their activities such as planning activities. Therefore, they need to share their information to be able to coordinate their tasks. Through the joint involvement of these two functions in CFTs, they can exchange their information and achieve the coordination of their tasks. Due to this coordination, the two groups can perform their activities rapidly and efficiently. Consequently, marketing and operations areas will be integrated.” (R3)</p> <p>“Exchanging information among people from different departments of a company within CFTs can help them to reduce the errors and problems that may occur when they work together. Therefore, marketing and operations members will be able to coordinate their tasks when implementing their strategies to be integrated.” (R14)</p>
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	<p><b>IV - Integrated plans and decisions</b></p> <p>(R2, P.7- R4, P.15- R7, P.27- R8, P.31- R12, P.47- R13, P.51- R15, P.59- R17, P.68- R20, P. 80- R21, P. 84 ).</p>	<p>“One of the most important advantages of CFTs is sharing information between members of these teams to be a valuable resource for making coordinated plans and decisions by marketing and operations groups together. Through this integrated planning, disagreements among these people can be reduced.” (R2)</p> <p>“By sharing information between people of CFTs, marketing and operations members will be able to make their plans and decisions jointly. This is because of the positive impact of the shared information of the two groups on their convergence to develop their activities in this process. For instance, in my organisation, marketing and operations personnel share their information about market demand and production requirements through their reports and data base when making their plans and decisions together.” (R7)</p> <p>“Exchanging information among members of CFTs underpins the ability of marketing and operations members to implement their planning activities jointly to be integrated. This is because of their shared and coordinated information and their understanding of market need and production facilities. As a result of this, the gap between marketing and operations function will be close.” (R15)</p>
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Meta-codes	Codes	Quotes
<b>6. Responsiveness</b>	<p><b>I - Clear understanding of customers needs</b></p> <p>(R1, P.3- R2, P.7- R4, P.15- R5, P.19- R6, P.23- R7, P.27- R9, P.35- R10, P.39- R11, P.43- R13, P.51- R17, P.68- R19, P. 76- R20, P. 80).</p>	<p>“Identifying customers’ preferences can be accurate when using CFTs due to the ability of marketing members to gather correct information from the market place in good time. This is because of their close relationship with their customers. As a result of this, operations members can respond to market demand before competitors. This rapid responsiveness reflects the integration between marketing and operations functions.” (R5)</p> <p>“By adopting CFTs, company can respond to market information quickly due to the accurate feedback of marketing members about customers’ needs and competitive products. According to this information, these teams can recognize customers’ opinions regarding their products and what they prefer in order to take effective actions to be satisfied.” (R17)</p>

	<p><b>II - Innovation</b></p> <p>(R1, P.3- R3, p.11- R4, P.15- R5, P.19- R6, P.23- R7, P.27- R8, P.31- R9, P.35- R10, P.39- R11, P.43- R12, P.47- R13, P.51- R14, P.55- R15, P.60- R16, P.64- R17, P.68- R18, P.72- R19, P. 76).</p>	<p>“Through using CFTs, creative ideas can be generated when members exchange their diverse expertise and background for developing new products before competitors in order to satisfy customers. This responsiveness can impact positively on the relationship between marketing and operations members as a result of achieving their functional objectives.” (R4)</p> <p>“Marketing and operations members of CFTs can learn more about developing new products when they implement this process frequently. This learning can contribute to the increased experience and knowledge of these people, enabling them to be innovative in satisfying customers’ preferences through the new products. This advantage underpins the joint work of marketing and operations functions.” (R7)</p> <p>“Different departments of a company can share their resources and efforts through the collaboration between their members within CFTs, in particular marketing and operations people, to be innovative when developing new product and process designs. This innovation can contribute to satisfying market demand through the two functions to be integrated.” (R19)</p>
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	<p><b>III - Speed</b></p> <p>(R2, P.7- R3, p.11- R5, P.19- R6, P.23- R8, P.31- R9, P.35- R10, P.39- R11, P.43- R12, P.47- R14, P.55- R15, P.60- R16, P.64- R17, P.68).</p>	<p>“Due to the innovation of CFTs members, they can compress manufacturing time through the innovative design of product and process by which non-valuable steps can be eliminated. Therefore, firms can meet market demand quickly when utilizing CFTs. This responsiveness leads to an interface of marketing with operations.” (R6)</p> <p>“For rapid responsiveness, CFTs adopt a number of practices such as computer aided design to produce and deliver product to customers quickly and before competitors”. (R14)</p> <p>“The collaboration and coordination between members of CFTs help them to perform their tasks rapidly through adopting practices such as implementing their activities concurrently. As a result of this, production time will be decreased, thus customers will receive their orders quickly. This rapid responsiveness helps to motivate marketing and operations members to become convergent.” (R15)</p>
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<b>Q3: What are the potential problems that could be associated when marketing and operations members work jointly within CFTs?</b>		
<b>Meta-codes</b>	<b>Codes</b>	<b>Quotes and Summaries</b>
<b>7. Conflict</b>	<b>I - Differences in functional goals and priorities</b>  (R1, P.3- R2, P.7- R3, P.11- R5, P.20- R6, P.23- R7, P.28- R8, P.31- R11, P.43- R12, P.47- R14, P.55- R15, P.60- R16, P.64- R17, P.69- R18, P.72- R20, P. 80).	<p>“.....Conflict may happen between marketing and operations members when they make a decision on pricing because the increase in production costs leads to high prices, while the marketing group prefers low prices.” (R1)</p> <p>“.....Disagreements may occur because marketing personnel tend to make some changes in the characteristics of a product while operations members are not enthusiastic about these modifications, wishing to avoid the changes in production lines and the increase in production costs.” (R16)</p>
	<b>II - Competition for resources</b>  (R3, P.11- R5, P.20- R8, P.31- R10, P.39- R12, P.47- R15, P.60- R16, P.64- R17, P.69).	<p>The relationships among people of CFTs are good due to their collaborative activities and the right choice of them. But, in some situations, disagreements occur because of the competition between these members such as marketing and operations groups especially for the limited resources such as financial resources. Furthermore, the reason for this competition is to be successful in achieving their functional priorities. (R10 and R17)</p> <p>Some departments of firm can indirectly become involved in the competition between marketing and operations groups when they support marketing or operations functions for resources. (R5)</p>

	<p><b>III - Differences in knowledge and specialized experience</b></p> <p>(R4, P.16- R6, P.23- R9, P.35- R11, P.43- R14, P.55- R17, P.69- R18, P.72- R21, P. 84).</p>	<p>“..... they sometimes have conflicting views when they discuss some issues or decisions with each other, due to their various experiences. Therefore, disagreements sometimes, occur between these people, in particular marketing and operations personnel.” (R4)</p> <p>“The relationships among people of cross-functional teams are good, but sometimes, they disagree with each other on some issues due to the variation in their views on how to deal with these issues such as advertising. This difference in their opinions is because their varied knowledge and expertise may cause misunderstanding.” (R17)</p>
	<p><b>IV - Limited experience in resolving problems</b></p> <p>(R4, P.16- R9, P.35- R10, P.39- R14, P.55- R17, P. 69- R18, P.72- R20, P. 81).</p>	<p>“In my organisation, there is a good relationship between members of cross-functional teams. However, sometimes this relationship might be problematic when these people spend a long time to resolve their problems, such as the problems of marketing and operations people causing disagreement.” (R20)</p> <p>“I think that in my company, there is close informal relations between people of cross-functional teams, but they should be able to solve their problems through their experience in order to avoid the conflict that can be resulted from these problems.” (R10)</p>



Meta-codes	Codes	Quotes and Summaries
<b>8. Lack of Empowerment</b>	<b>I - Centralisation and limited authority</b> (R1, P.3- R3, P.12- R4, P.16- R5, P.20- R6, P.24- R7, P.28- R8, P.32- R9, P.36- R11, P.44- R12, P.48- R13, P.52- R14, P.56- R15, P.60- R16, P.65- R17, P.69- R18, P.73- R20, P. 81- R21, P. 85).	CFTs are granted limited authority to make decisions, in particular the important decisions, such as decisions on importing new production machines because this requires obtaining consent from the top management and sometimes from the industry ministry. Furthermore, granting authority to these teams is related to the instructions of top management and industry ministry. (R5 and R18)
	<b>II - limited autonomy</b> (R3, P.12- R4, P.16- R5, P.20- R6, P.24- R7, P.28- R9, P.36- R10, P.40- R11, P.44- R12, P.48- R13, P.52- R15, P.60- R17, P.69- R18, P.73- R21, P. 85).	<p>“In my company, cross-functional teams have the autonomy to implement their tasks, but in some situations, managers of other departments from outside these teams attempt to impact the decisions of CFTs for functional priorities.” (R6)</p> <p>“I think that CFTs in my organisation perform their activities and projects without any pressure from other departments. However, sometimes some of these departments make suggestions to be adopted by CFTs for developmental purposes.” (R17)</p>

	<p><b>III - Unclear tasks and plans</b></p> <p>(R2, P.8- R4, P.16-R6, P.24- R7, P.28- R8, P.32- R11, P.44- R13, P.52- R14, p.56).</p>	<p>In some cases, the management of the company intervenes in making plans and decisions by CFTs if these plans and decisions are unclear, particularly when there is a lack of information. This is because of the essential role of information in making clear plans and correct decisions. (R8)</p> <p>People from outside CFTs may indirectly be involved in these teams to provide the support for members when they lack information to perform their tasks effectively and make their decisions. (R11)</p>
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Meta-codes	Codes	Quotes and Summaries
<b>9. Lack of Communication</b>	<b>I - Diverse backgrounds, experience, and beliefs</b>  (R1, p.4- R3, P.12- R4, P.16- R5, P.20- R7, P.28- R8, P.32- R11, P.44 - R13, P.52 - R14, P.56 - R16, P.65 - R18, P.73)	<p>“Communication between people of cross-functional teams in my organisation is good because of the use of telephone, mobile phone, and email. However, due to the different expertise and background of members, sometimes these teams face problem of misunderstanding, which negatively impact their communication.” (R4)</p> <p>“.... But in some cases, due to the various knowledge of cross-functional teams’ members, they face a difficulty to communicate their information and ideas between them, because of misunderstanding.” (R13)</p>
	<b>II - Centralization</b> (R2, p.8- R4, P.16- R6, P.24- R7, P.28- R8, P.32- R10, P.40- R11, P.44- R14, P.56- R16, P.65- R17, P.69- R19, P. 77- R21, P. 85)	<p>Sometimes, CFTs or their leadership focus on some members, particularly operations group, more than others when sharing information and ideas, thus causing overloaded information of operations personnel while other members lack this information. (R2 and R17)</p>

	<p><b>III - Vertical communications</b></p> <p>(R1, P.4- R3, P.12- R6, P.24- R10, P.40- R15, P.61- R17, P.69- R18, P.73- R21, P. 85)</p>	<p>“Despite of using the horizontal communication among members of cross-functional teams, but vertical communication is still used between these teams and other departments due to the hierarchy of my company.” (R10)</p> <p>“Some of the communication between cross-functional teams’ members and with other parts of my firm is vertical according to its organizational structure, which takes more time and negatively affects the accuracy of information and ideas.” (R15)</p>
	<p><b>IV - Insufficient use of communication technology</b></p> <p>(R2, P.8- R3, P.12 - R4, P.16 - R5, P.20 - R7, P.28 - R12, P.48 - R13, P.52 - R15, P.61 - R16, P.65 - R17, P.69- R21, P. 85)</p>	<p>“My organisation uses the internet for communication, but this use is inadequate because of its limited facilities and the need for training members of cross-functional teams on the applications to be able to utilize it more effectively.” (R5)</p> <p>“In my organisation, there is a limited use of communication technology by cross-functional teams although their use of the internet, but it should be developed by utilizing more applications and facilities.” (R15)</p>

<b>Q4: How can product delivery performance be maximised through adopting CFTs in Iraqi public textile manufacturing organisations?</b>		
<b>Meta-codes</b>	<b>Codes</b>	<b>Quotes</b>
<b>10. Rapid delivery</b>	<b>I - Developing time-based manufacturing capabilities</b>  (R1, p.4- R2, p.8- R3, P.12 - R4, P.17- R5, P.21- R6, P.24- R9, P.36- R10, P.40- R12, P.48- R13, P.52- R15, P.61- R16, P.65- R17, P.70- R18, P.73- R19, P. 77- R21, P. 85)	<p>"As a result of exchanging knowledge and experiences of CFTs, they can be innovative in improving production resources to manufacture products quickly when making correct decisions on these resources such as technology in due course jointly. For example, CFTs made the decision on updating the technology of the production line in the weaving stage, and they obtained the consent of top management and industry ministry to import new weaving machines. This decision led to increased productivity and reduced delivery time." (R4)</p> <p>"By using CFTs, the factory can improve production capabilities such as the effective communication by which information can be followed quickly throughout the production lines. This can help to satisfy market demand through rapid delivery. " (R13)</p>

	<p><b>II - Reducing manufacturing time</b></p> <p>(R2, p.8- R3, P.12- R4, P.17- R6, P.24- R7, P.29- R9, P.36 - R10, P.40- R13, P.52- R14, P.56- R16, P.65- R17, P.70- R18, P.73- R20, P. 81)</p>	<p>"Using CFTs effectively can positively impact delivery time. This is because of the ability of these teams to compress time consumption in manufacturing processes through performing many activities concurrently when designing and implementing these processes." (R2)</p> <p>"Adopting CFTs can support the competitiveness of the company to deliver products quickly to customers because of the ability of these teams to deal with production problems rapidly. These problems can be revealed and tackled early by members of CFTs together due to their shared information and coordination." (R3)</p> <p>"As a result of the innovation of CFTs due to their diverse experience, they can redesign product and process in order to eliminate non-valuable activities. This innovative design of product and process helps to decrease manufacturing time of products to be delivered quickly to customers." (R14)</p>
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	<p><b>III - Improving marketing capabilities of delivery</b></p> <p>(R1, p.4- R3, P.12- R6, P.24- R9, P.36- R11, P.44 - R12, P.48- R14, P.56- R15, P.61- R16, P.65- R18, P.73)</p>	<p>"Marketing members of CFTs can develop their ability to deliver products rapidly to customers through the effective distribution of products in terms of procedures and the efficiency of employees. Furthermore, in order to deliver products in the right market location quickly, there is a need for utilising sufficient distribution channels in the markets." (R1)</p> <p>"Through using CFTs, the company can achieve the competitive advantage of fast delivery through managing and processing the information of marketing and operations efficiently when the two groups use an effective information system jointly, thus developing the delivery capabilities of the marketing department." (R6)</p> <p>"One of the important decisions of CFTs is the decision on developing the distribution system by sharing sales centres among factories of the company and with other companies in the Iraqi textile sector." (R9)</p> <p>"Due to the close relationship of CFTs with their customers, and their increased experience about the market, they can use distribution channels effectively in the right places into the target markets in order to facilitate the delivery process of products to their customers rapidly." (R15)</p>
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Meta-codes	Codes	Quotes
<b>11. Delivery on Time</b>	<b>I - Coordinated planning and scheduling</b>  (R1, P.5- R2, P.9- R3, P.13- R4, P.17- R5, P.21- R6, P.25- R7, P.29- R8, P.33- R9, P.37- R10, P.41- R11, P.45- R12, P.49- R13, P.53- R16, P.66- R17, P.70- R21, P. 86)	<p>"Through the coordinated planning of operations and marketing groups within CFTs, the company can satisfy their customers by delivering their orders on time. This is because of the positive impact of this planning on managing inventory and demand." (R1)</p> <p>"The effective use of CFTs contributes to gaining customers' loyalty through the reliability of delivery. The reason for this is the ability of CFTs to resolve production schedules problems that may cause delays in delivering products to customers. These problems can be tackled rapidly by using these teams through the coordination and their varied expertise and knowledge." (R3)</p> <p>"Because of the integrated information and knowledge of CFTs about market demand and production requirements, marketing and operations members can make their plans and schedules jointly to be coordinated. As a result of this, customers' orders can be shipped when promised." (R5)</p> <p>"Through sharing and coordinating information of marketing and operations members of CFTs, they can perform their planning activities together to be integrated. As a result of this, errors and variations that may occur when implementing marketing and production plans can be reduced. Therefore, they can avoid the delays in delivering products to the customer." (R17)</p>



	<p><b>II - Matching demand to production capacity</b></p> <p>(R3, P.13- R4, P.17- R6, P.25-R8, P.33- R11, P.45-R13, P.53- R14, P.57- R15, P.62- R17, P.70- R18, P.74)</p>	<p>"Adopting CFTs can help firms to avoid the delays in delivering products to their customers as a result of the accurate sales forecasting by which production capacity can be determined correctly. This is because of the shared information and knowledge of marketing and operations members." (R11)</p> <p>"Exchanging various experiences and knowledge among marketing and operations members of CFTs regarding market demand and production capacity can lead to reduced errors and variations in predicting demand. This can help them to determine production capacity correctly. Consequently, firms can achieve the balance between demand and supply, thus orders can be shipped on time." (R18)</p>
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	<p><b>III - Conformity between the plans and schedules of marketing and production</b></p> <p>(R1, P.5- R3, P.13- R4, P.17- R5, P.21- R7, P.29- R8, P.33- R9, P.37- R11, P.45- R13, P.53- R14, P.57- R15, P.62- R16, P.66)</p>	<p>"To develop the competitiveness of the company in delivering products to their customers on time, there is a need to adopt an integrated information system to deal with the shared information of CFTs effectively for more coordinated planning. This coordination is critical to attain the fit between sales and production plans and schedules." (R5)</p> <p>"The joint work of CFTs to make plans and schedules of sales and production by marketing and operations members can lead to reduced variations between their plans and schedules. As a result of this conformity, the problems and delays that may occur when implementing the plans and schedules of the two groups can be reduced, thus customers will receive their orders as promised." (R7)</p> <p>"The delivery reliability as a major competitive advantage of the company can be developed when using CFTs to make plans and schedules of sales and production by marketing and operations members jointly. This is because of the ability of these people to exchange accurate information and coordinate their planning activities effectively in this process." (R15)</p>
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Meta-codes	Codes	Quotes
<b>12. Quick development of new products</b>	<b>I - Exploring market opportunities rapidly</b>  (R1, P.5- R2, P.9- R3, P.13- R4, P.17- R6, P.25- R7, P.29- R8, P.33- R9, P.37- R10, P.41- R11, P.45- R12, P.49- R16, P.66- R17, P.70- R18, P.74- R20, P. 82)	<p>"Due to the close relationship between CFTs and customers, and the effective market research of these teams, they can determine customer preferences accurately and rapidly. This can help to underpin the ability of CFTs to satisfy market needs before competitors." (R6)</p> <p>"As a result of the effective market research of CFTs, they can obtain accurate information about customers' preferences and competitive products to explore good opportunities to meet customers' expectations before competitors. As an example of the collaboration between CFTs people in this respect, in many cases, marketing and operations members go together to the market place in order to gather information. " (R18)</p>

	<p><b>II - Developing the new design of product quickly</b></p> <p>R1, P.5- R2, P.9- R3, P.13- R4, P.17- R5, P.21- R6, P.25- R7, P.29- R8, P.33- R9, P.37- R10, P.41- R11, P.45- R12, P.49- R13, P.53- R14, P.57- R15, P.62- R16, P.66- R17, P.70- R21, P. 86)</p>	<p>"As a result of the diverse experiences and knowledge of CFTs' members, new ideas can be generated for developing innovative design of product and process quickly. Furthermore, the performance of these people when developing new products can be improved due to the participation of resources and experience, thus NPD process could be successful and rapid." (R5)</p> <p>"NPD time could be reduced when utilising CFTs for implementing this process. This is because of their collaborative practices by which they can benefit from the diversity of their knowledge and expertise. Moreover, effective communication among members of NPD teams can promote their ability to perform their tasks successfully and quickly." (R13)</p> <p>"Through adopting CFTs, the company can develop new products frequently and quickly because these teams are able to perform their activities simultaneously and accelerate processes. This advantage depends on the effective collaboration of CFTs through sharing their resources, information, and expertise." (R16)</p>
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	<p><b>III - Utilising sufficient operations requirements</b></p> <p>(R1, P.5- R2, P.9- R4, P.17- R6, P.25- R7, P.29- R11, P.45- R15, P.62- R17, P.70- R18, P.74)</p>	<p>"The effective use of CFTs to develop new products helps to reduce NPD time. The reason for this is the collaborative and coordinated activities of marketing and operations members to develop the tactical requirements of a new product. For instance, in my organisation, CFTs make decisions and obtain the consent of the top management and industry ministry on importing new machines to produce new product." (R1)</p> <p>"Making correct and fast decisions on making modifications in production lines by CFTs for developing new products can help to manufacture and launch the new product before competitors. This is because of the essential role of these decisions in employing production resources and facilities for improving the new product rapidly." (R17)</p>
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